CHAPTER 53

LIST OF EFFECTIVE TEMPORARY REVISIONS

FOLLOWING IS A COMPLETE LISTING OF ALL ACTIVE TEMPORARY REVISIONS (TR'S). TR'S NOT LISTED SHOULD BE REMOVED. THE ATA NUMBER, CONFIG CODE AND PAGE NUMBER IDENTIFIES THE PAGE PRECEDING THE TR.

TR NUMBER	ATA NUMBER	CONFIG CODE	PAGE NUMBER	TR DATE

NONE

CHAPTER 53

FUSELAGE

LIST OF EFFECTIVE PAGES

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CHAPTER 53

FUSELAGE

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FUSELAGE - DESCRIPTION AND OPERATION

1. General

The fuselage is of all metal semimonocoque construction and is pressurized between the forward and aft pressure bulkheads, located at FS 123.50 and FS 1792, respectively. The afterbody extends from FS 1792 to FS 1975. The major structural assemblies of the fuselage are shown in Figure 1. The six barrel sections which comprise the pressurized area are further assembled into the forward, mid, and aft fuselage sections. The forward fuselage consists of the flight station (section No. 1) and barrel section No. 2. The mid fuselage consists of barrel sections No. 3, No. 4, and No. 5. The aft fuselage consists of barrel section No. 6. These three fuselage sections are joined at FS 539 and FS 1453 to form the pressurized area of the fuselage. The afterbody is joined to the pressurized structure at the aft pressure bulkhead, FS 1792.

The forward, mid and aft fuselage sections, and afterbody contain primary areas, compartments, system, and structural provisions as follows:

Forward Fuselage Section

- Flight station
- Forward electronic compartment
- Forward waste system compartment
- Forward lavatories
- Nose landing gear wheel well
- Heat exchanger compartment
- Environmental control system compartments
- Passenger compartment
- Forward area of forward cargo compartment

Mid Fuselage Section

- Aft area of forward cargo compartment
- Galley compartment
- Mid electrical service center

Center wing box structure

Hydraulic service center

Main landing gear wheel wells

Passenger compartment

Forward area of center cargo compartment

Aft Fuselage Section

Aft area of center cargo compartment

Aft cargo compartment

Aft electronic equipment area

Aft waste system compartment

Passenger compartment

Aft lavatories

Afterbody

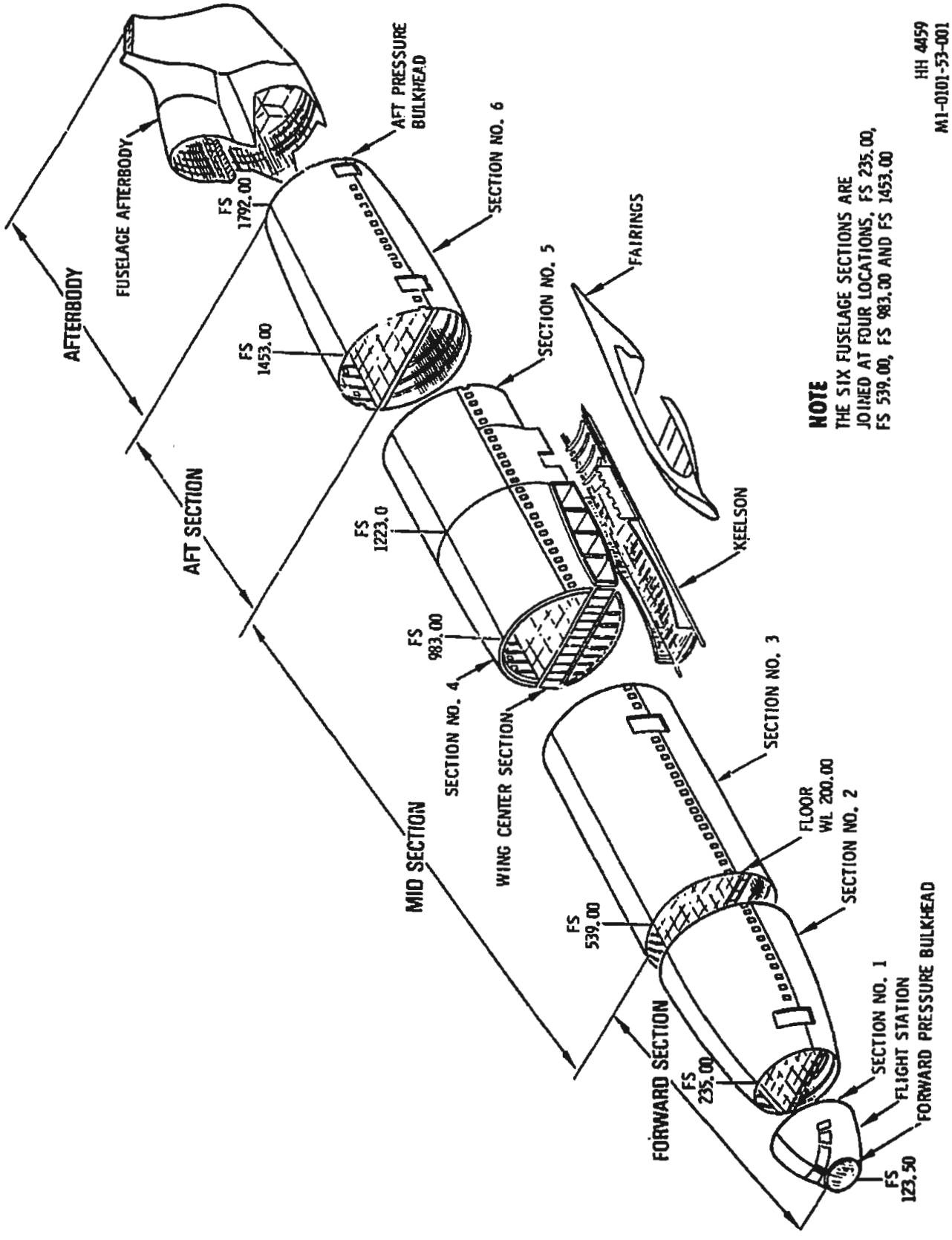
Air inlet and S-duct support structure for center engine (No. 2)

Auxiliary power unit (APU) compartment

Vertical stabilizer support structure

Horizontal stabilizer center box support structure

Structure for attachment of center engine (No. 2) support structure, enclosure, and fairings



Fuselage Structural Arrangement
Figure 1

MAIN FRAME - DESCRIPTION AND OPERATION

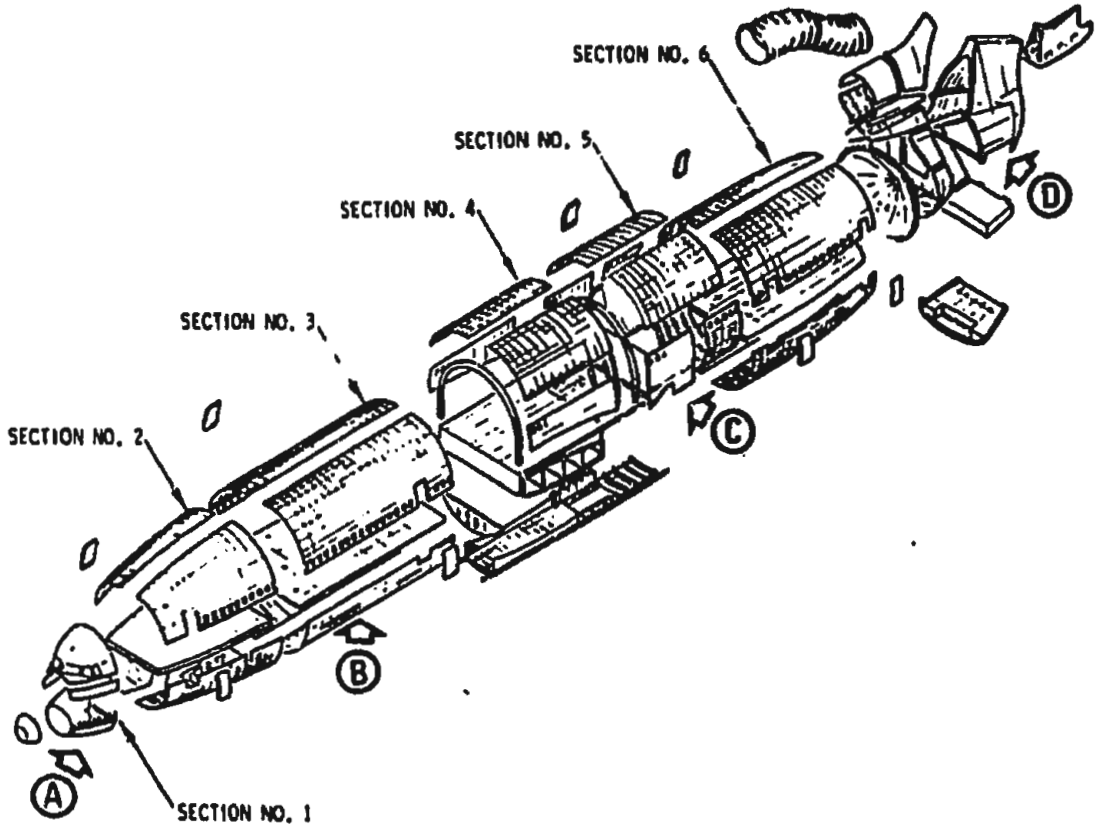
1. General

The fuselage main frame (Ref. Fig. 1) is constructed of conventional transverse frames and bulkheads, longitudinal longerons, and stringers. Longitudinal floor support beams are positioned over the wing center section, and lateral floor support beams are positioned in the remainder of the passenger cabin.

The fuselage has a constant cross section of 235 inches from FS 538 to FS 1535. The fuselage tapers forward from FS 538 to the pressure bulkhead at FS 123.50, and from FS 1535 the fuselage
R tapers aft to the pressure bulkhead at FS 1792. The afterbody extends from FS 1792 to FS 1975. The radome is attached at FS 123.50 and extends forward to FS 83. The fuselage afterbody provides support for the stabilizers and for pylon and fairing structure which supports the center (No. 2) engine.

The fuselage shell consists of large bonded panel assemblies. Each panel consists of clad skins, doublers, and titanium fail-safe straps that are bonded together and reinforced with riveted splice plates. The panel assemblies are secured to the frames and longerons with interference fit fasteners to form the fuselage shell.

The various fuselage subassemblies are assembled into six barrel sections, further assembled into three sections, and then spliced to form the complete fuselage pressurized area (Ref. 53-00-00). The afterbody extends aft of the aft pressure
R bulkhead to FS 1975.



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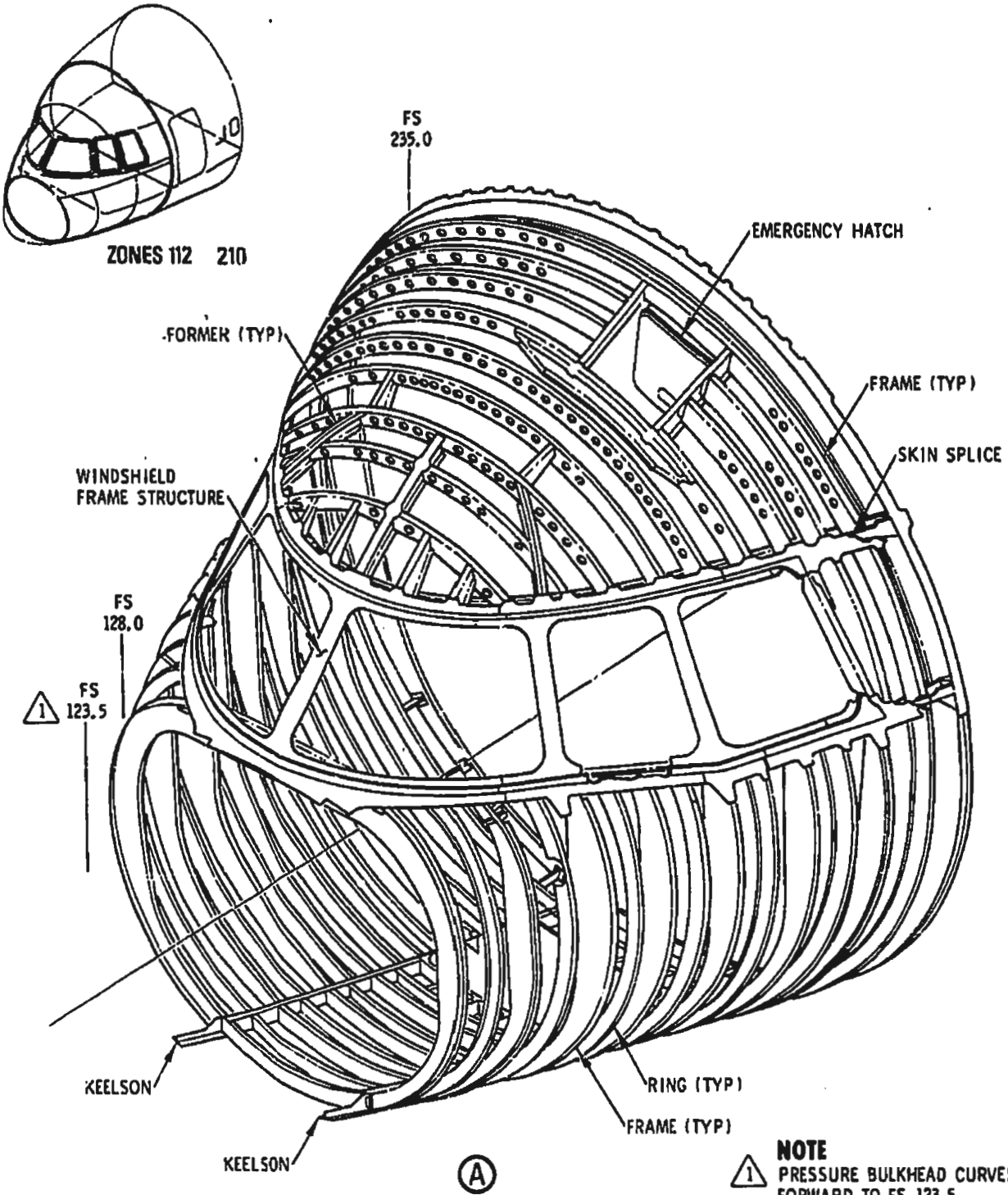
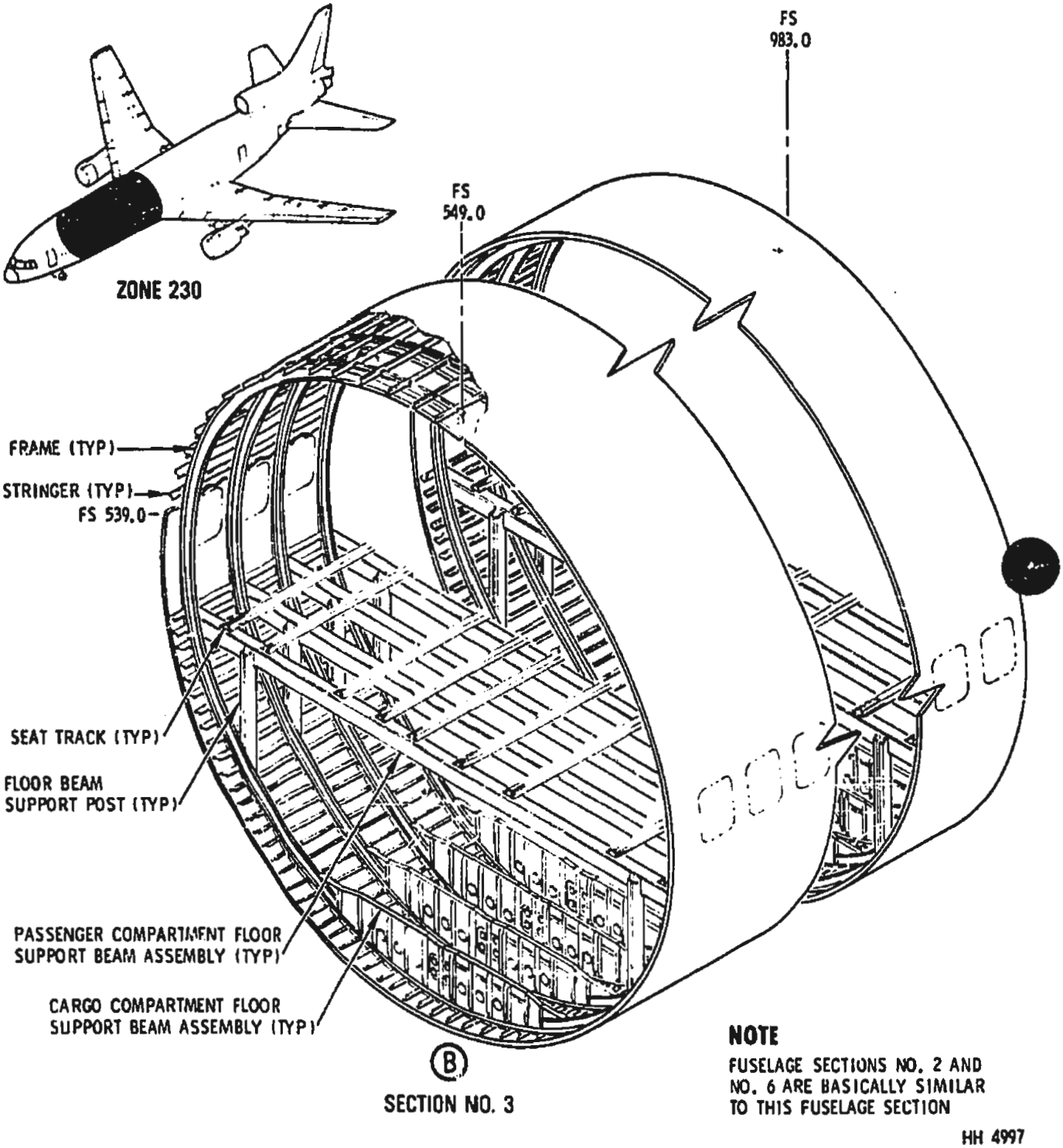
Fuselage Structural Breakdown
Figure 1 (Sheet 1)



Fuselage Structural Breakdown
Figure 1 (Sheet 2)



NOTE

FUSELAGE SECTIONS NO. 2 AND NO. 6 ARE BASICALLY SIMILAR TO THIS FUSELAGE SECTION

HH 4997
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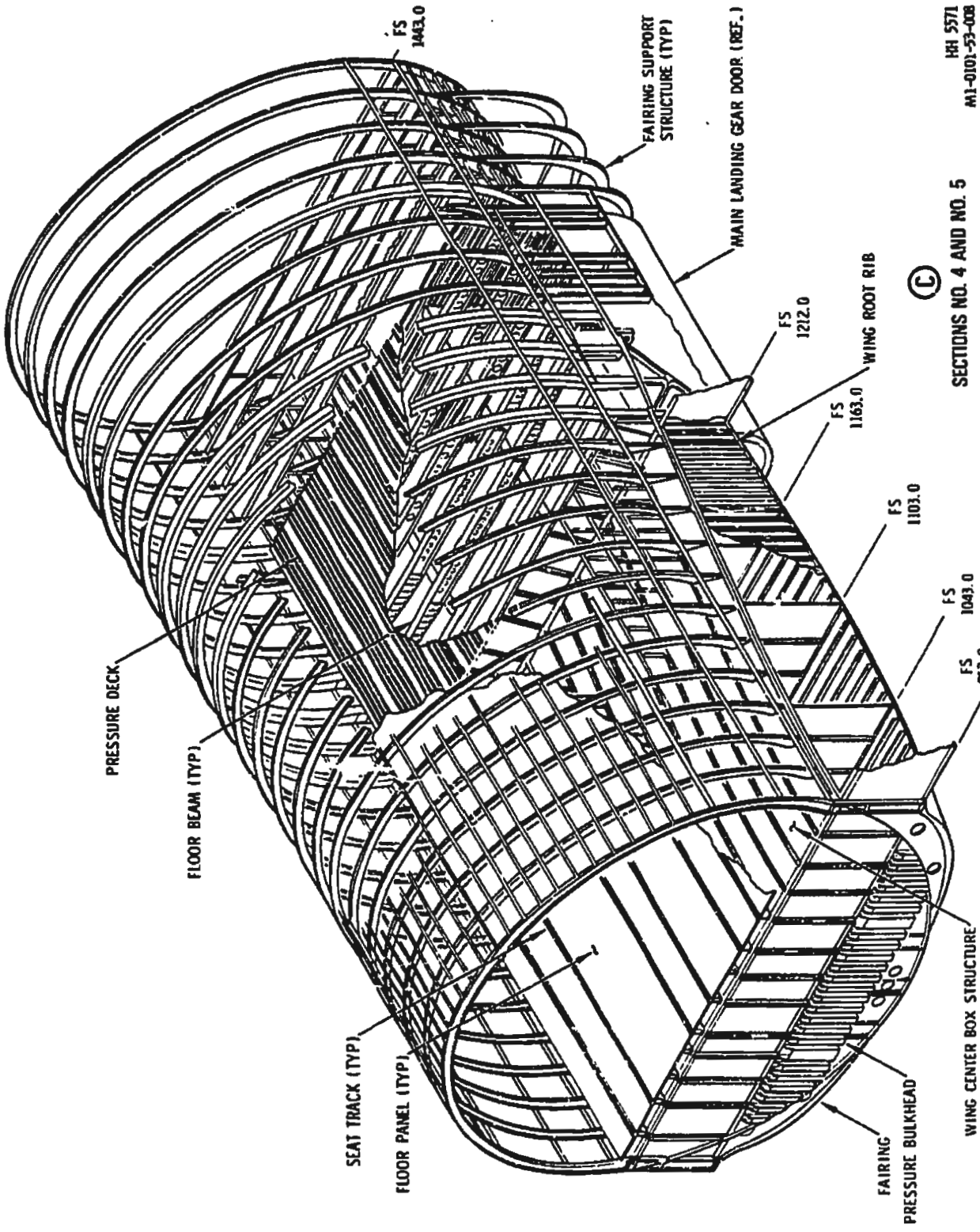
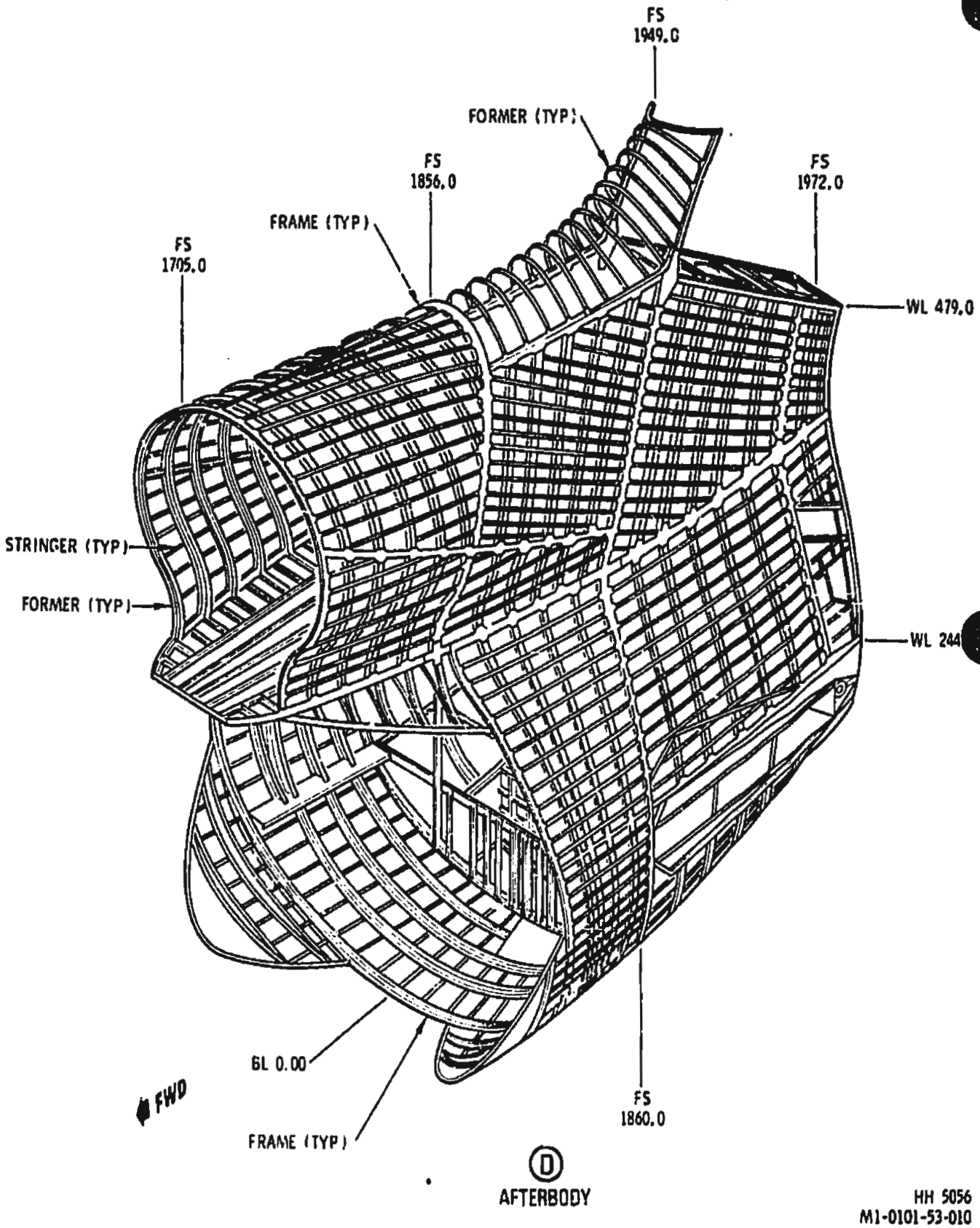
Fuselage Structural Breakdown
Figure 1 (Sheet 3)



Fuselage Structural Breakdown
Figure 1 (Sheet 4)



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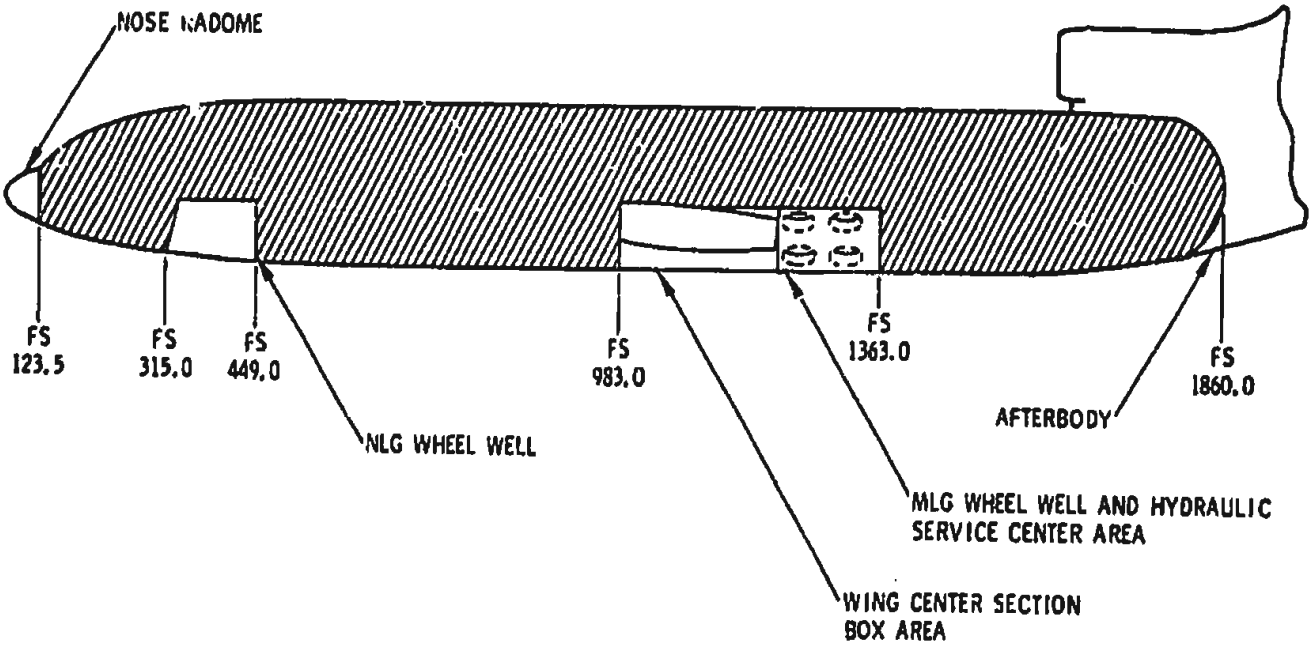
Fuselage Structural Breakdown
Figure 1 (Sheet 5)

BULKHEADS - DESCRIPTION AND OPERATION

1. General

The pressurized area of the aircraft is shown in Figure 1. The pressure bulkheads (Ref. Fig. 2) are located forward of the nosewheel, across the top of the nosewheel well, and aft of the nosewheel well at FS 442. Pressure bulkheads and panels are located at the wing front spar, extend over the top of the center wing box to the rear spar, over the hydraulic service center and MLG wheel wells, then downward at FS 1363 bulkhead.

The fuselage, aft of the aft pressure bulkhead, supports the horizontal stabilizer center box structure, vertical stabilizer, APU, air inlet duct and the NO. 2 engine. A structure of contoured formers and stringers surround the air inlet S-duct and fairs the fuselage into the vertical stabilizer. The No. 2 engine primary structural support members consist of steel forgings with titanium and aluminum formers and skins.



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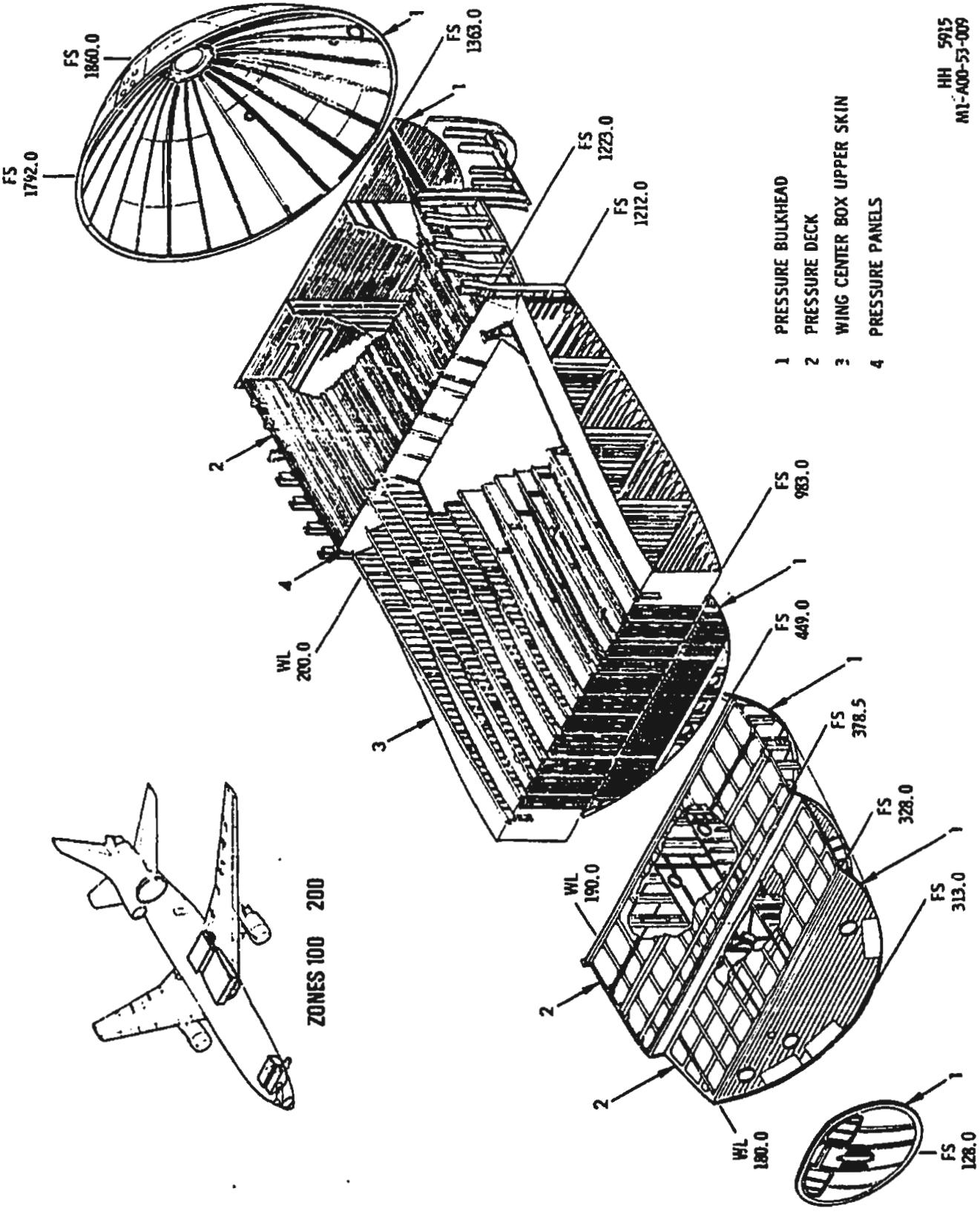
Pressurized Area Diagram
Figure 1



Pressure Bulkheads
Figure 2

FORWARD PRESSURE BULKHEAD DOOR - REMOVAL AND INSTALLATION

1. Equipment and Materials

Drill motor, reversible, air or electrical

R Socket (3/8 in. square drive x 7/16 in.)

R Adapter Drive (as required)

R Torque Wrench

R Sealing Compound, PR 1431G, Type I (Products Research Corp.), or
R equivalent

2. Referenced Procedures

	33-44-00	Weather Radar System - Maintenance Practices
	53-51-51	Fuselage Nose Radome - Removal and Installation
R	20-51-04	Environmental Sealing of Model L-1011 Airplane

3. Removal/Installation

A. Removal

WARNING: DO NOT OPEN FUSELAGE NOSE RADOME IF WEATHER RADAR IS IN OPERATION. DEENERGIZE SYSTEM (REF. 34-44-00).

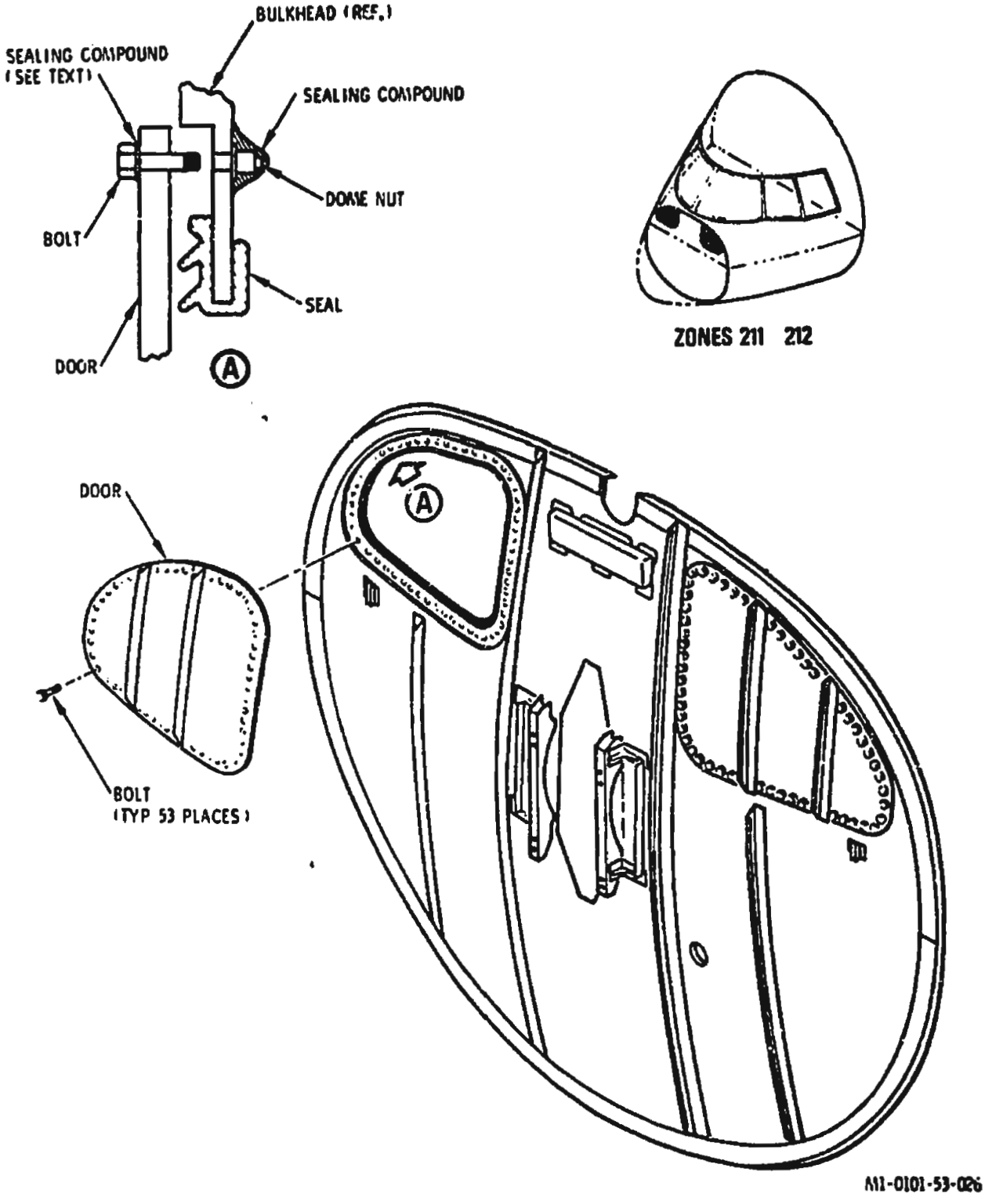
R NOTE: This procedure applies to both doors. Removal of
R doors provides access to windshield defogging fan,
R rain repellent manifold, windshield wiper motor, and
R wiring and plumbing under main instrument panels.

R (1) Open and secure radome in opened position (Ref. 53-51-51).

R (2) Remove bolts attaching door to forward pressure
R bulkhead with drill motor or socket wrench equipped
R with suitable adapter drive and socket (Ref. Fig. 401);
R retain bolts for reuse.

CAUTION: WHEN REMOVING DOOR, AVOID STRIKING THE GLIDE SLOPE, LOCALIZER, AND WEATHER RADAR ANTENNAS.

R (3) Remove door and stow as required.



R Forward Pressure Bulkhead Door - Removal and Installation
R Figure 401

B. Installation

WARNING: DO NOT INSTALL DOOR IF WEATHER RADAR IS IN OPERATION. DEENERGIZE SYSTEM (REF. 33-44-00).

CAUTION: ENSURE THAT OPENED RADOME IS SECURED (REF. 53-51-51).

NOTE: Check condition of sealing compound around dome nuts and reseal or repair as required. If drill motor is used for installing bolts, do not attempt to fully tighten; use socket wrench or torque wrench for final tightening.

(1) Hold door in position against silicone rubber seal and temporarily install a bolt in each corner of door.

(2) When door is aligned and seated, apply sealing compound to outer surface of each bolt hole (Ref. 20-51-04).

(3) Install remaining bolts.

(4) Remove temporarily installed bolts. Apply sealing compound same as in Step (2) and reinstall bolts.

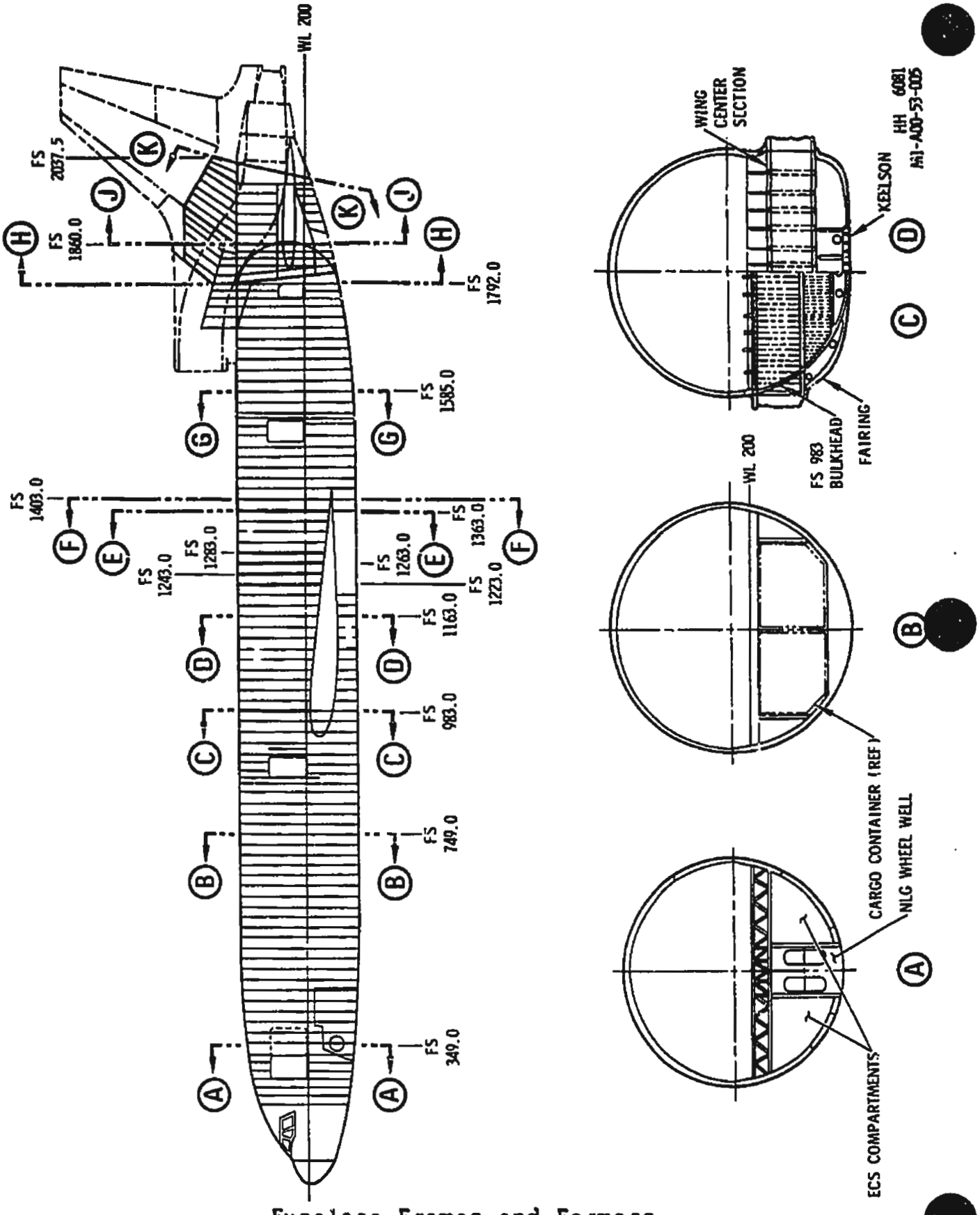
(5) Torque all bolts 25 (±)5 lb in.

(6) Close and latch radome (Ref. 53-51-51).

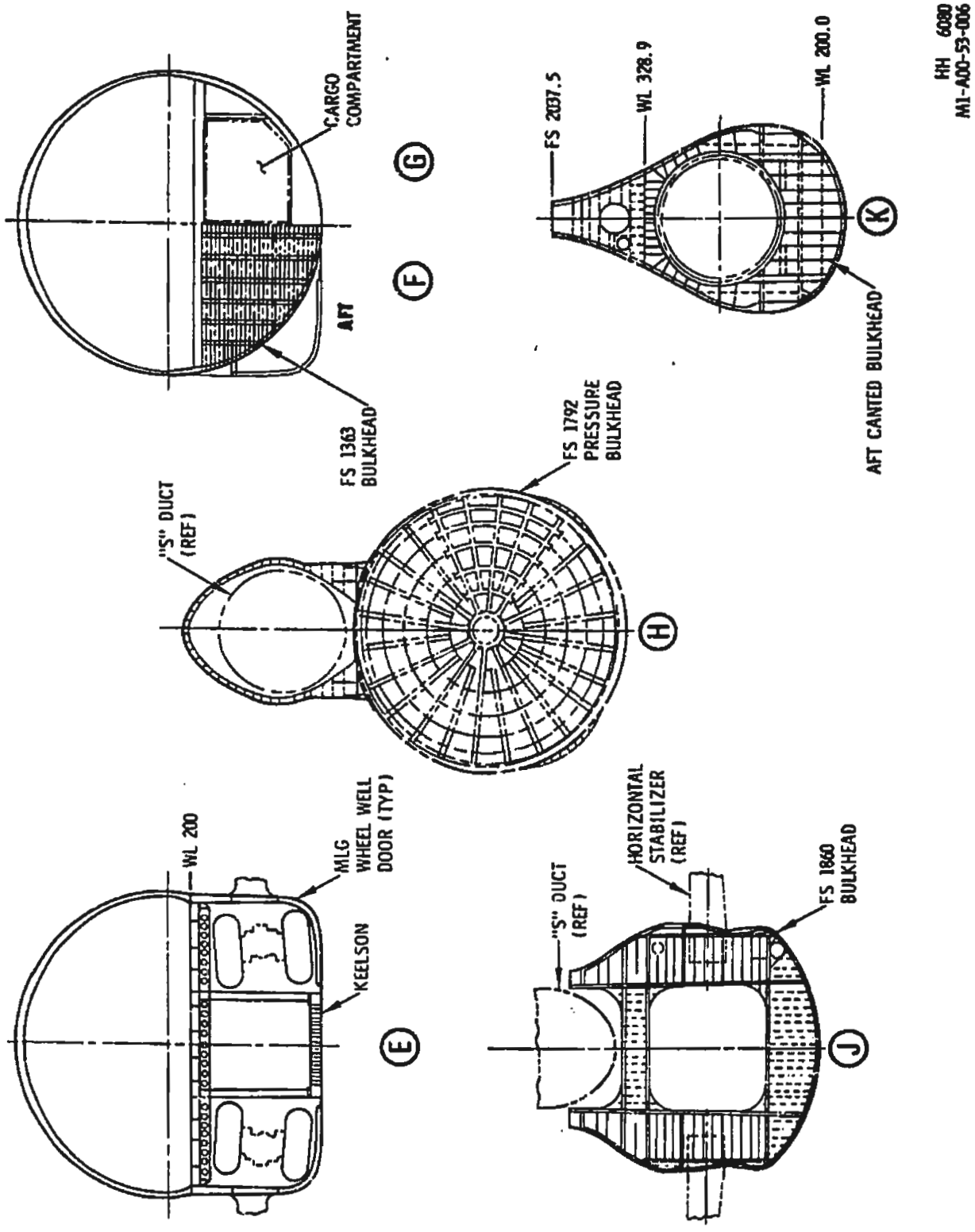
FRAMES AND FORMERS - DESCRIPTION AND OPERATION

1. General

The two-piece frame assemblies (Ref. Fig. 1) are spaced an average of 20 inches apart. Six main frames are located at FS 983, 1223, 1243, 1263, 1283, and 1363. The main frames are made of 7075-T6 aluminum forgings and extrusions. These frames distribute wing and landing gear loads into the fuselage structure. The remaining two-piece frames are formed sheet aluminum channels riveted to L-sections. Extruded T-sections riveted to L-sections form the frame cross sections at the barrel splice positions. Aluminum alloy 7178-T6 clad is used on the top and side fuselage frames. Frames below the floorline are made of 7075-T6 clad. Frames around all doors are heavier than adjacent frames and are reinforced with doublers, intercostals, and fittings.



Fuselage Frames and Formers
Figure 1 (Sheet 1)



Fuselage Frames and Formers
Figure 1 (Sheet 2)

LONGERONS AND STRINGERS - DESCRIPTION AND OPERATION

1. General

Tapered stringers (Ref. Fig. 1) are extensively used on the fuselage structure. The stringers are spaced approximately 8.5 inches apart. Longerons are located on the left and right sides of the fuselage at WL 280.56 and 200, at a typical fuselage cross section. The longitudinal area between the longerons is stringerless. A heavy sheet aluminum window belt of doubled and tripled skin panels fill the space.

Stringer Diagram
Figure 1

KEELSON - DESCRIPTION AND OPERATION

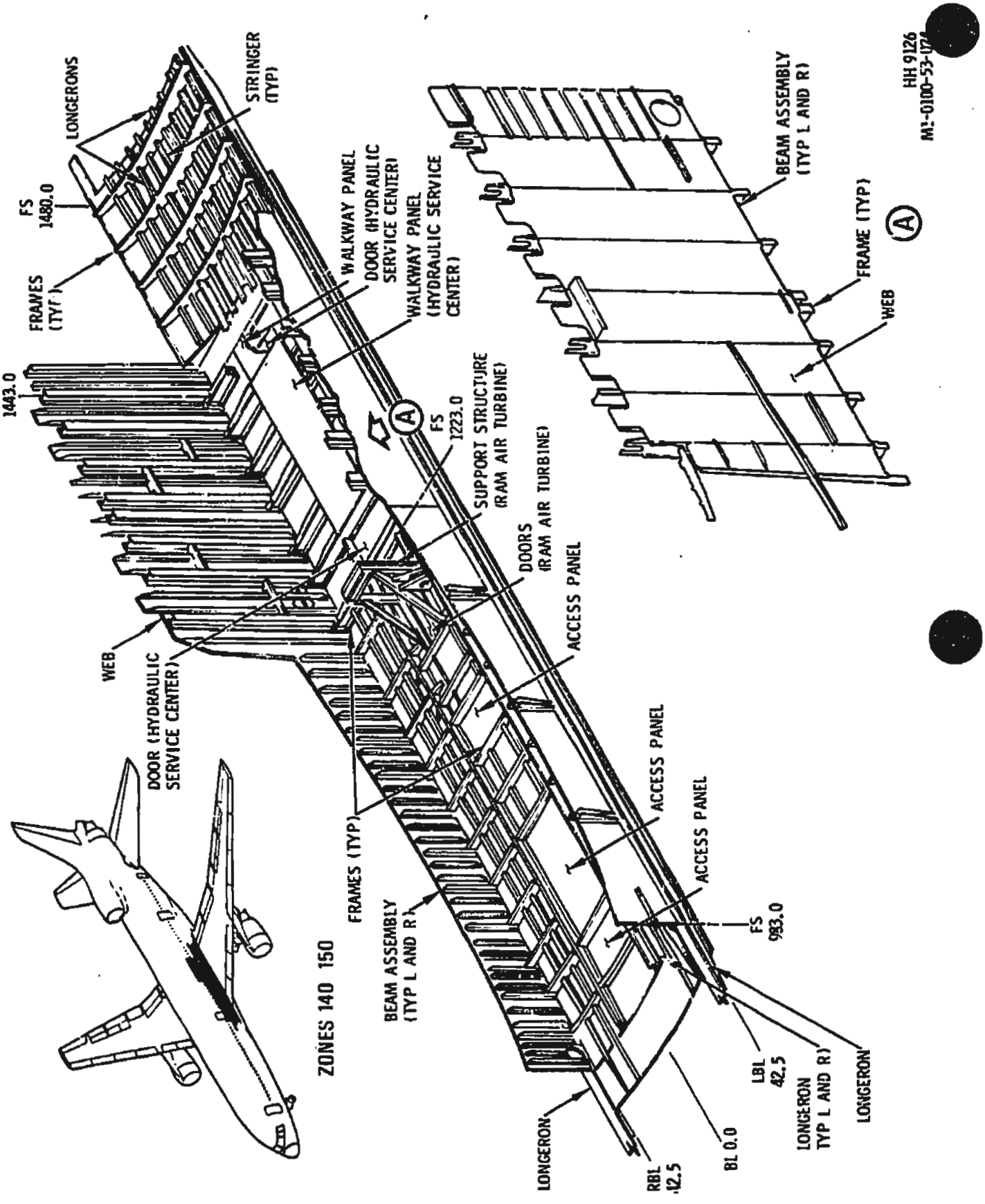
1. General

The keelson structure (Ref. Fig. 1) forms the longitudinal support of the lower fuselage through the main landing gear (MLG) wheel well area. The keelson structure which extends from FS 923 to FS 1480, absorbs the structural loads in the MLG area and distributes the loads forward and aft of the wheel well area. The structure consists of skin, longerons, stringers, beams, frames, webs, angles, doors, and panels. The keelson beam assemblies attach to the center wing box lower surface and to the fuselage wheel well area. The longerons which extend forward and aft of the beam assemblies attach to the fuselage structure.

R The keelson structure provides space for the hydraulic service
R center. This service center is located along the aircraft
R centerline between the left and right MLG wheel wells, and it
R extends the entire length of the wheel well webs. A hinged and
R latch-type access door is located at the forward and aft ends of
R the hydraulic service center.

Forward of the hydraulic service center along the centerline, provisions are made for mounting a ram air turbine (RAT). Two hinged doors which open outward from the centerline enclose the RAT assembly. The doors, which are linkage-actuated, open when the RAT is deployed and close when the RAT is stowed.

R Forward of the RAT, three removable access panels are provided
R to gain acess to various equipment and to perform all
R inspections and maintenance work. These three metal honeycomb
R panels are attached with screws to permit removal of the ECS
R bleed air ducts. A section of support structure separates the
R forward two of these panels. This support structure is attached
R with screws and can be removed, if necessary, for access.



Keelson Structure
Figure 1

EFFECTIVITY: ALL

FUSELAGE DOOR FRAMES - DESCRIPTION AND OPERATION

1. General

The fuselage door frames are built into the door area surround structure and become an integral part of the fuselage. The door pressure stop fittings and seal retainers are attached to the surround structure. In addition, drainage of water from the lower door sill area is provided.

2. Passenger Door Sill Drainage

R Each passenger door sills have provisions for drainage of water
R which may collect in the door area (Ref. Fig. 1).

R Doors L1, 2, 3 and R1, 2, 3 have two drain valves each, located
R near the fore and aft ends of the door sill.

R Doors L4 and R4 have on drain valve each, located near the aft
R end of the door sill.

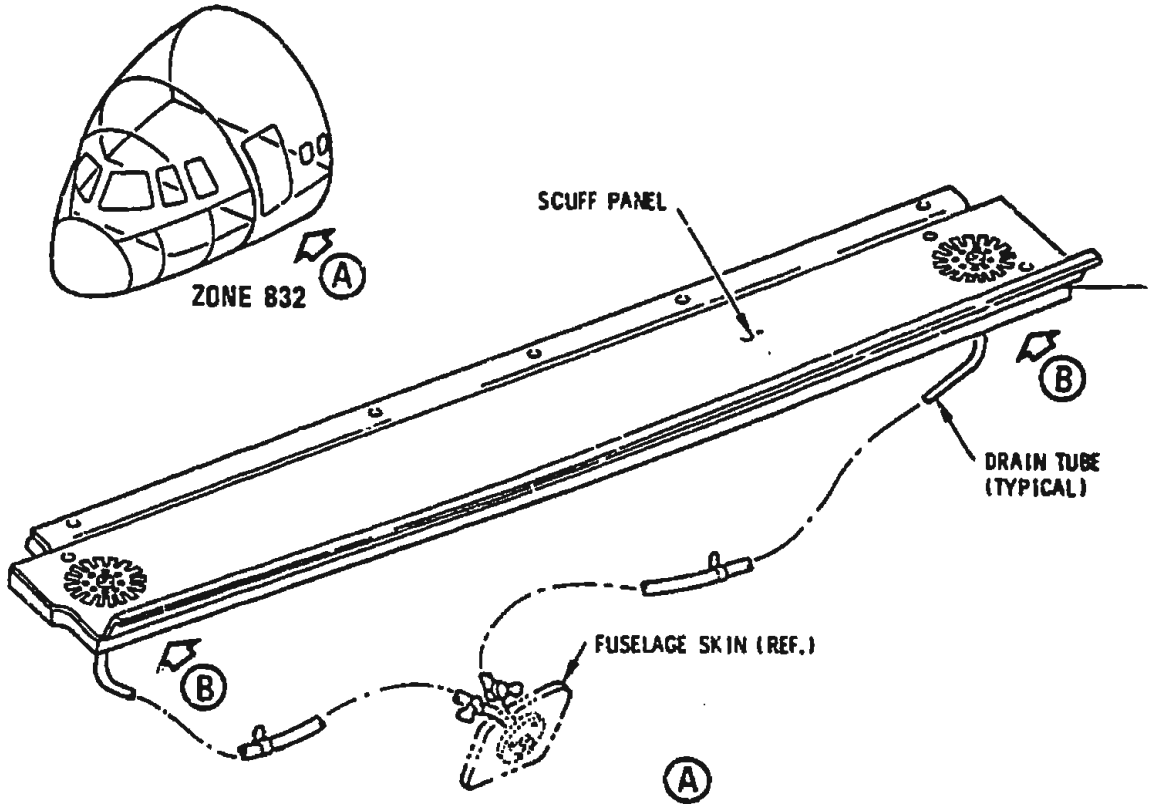
The drain valve(s), associated plumbing and overboard drain fitting are located below the door sill scuff panel and door sill substructure. The scuff panel has a hole which aligns with each drain valve. A cover plate, with a series of slots and holes, covers the drain fitting opening. The cover plate is attached with a screw and retainer assembly and provides quick access to the drain valve for required maintenance. The drain valve is installed in each drain fitting cavity and is normally open for free drainage of water when the aircraft is unpressurized. When the cabin is pressurized, the valve closes to provide sealing of the drain fitting opening.

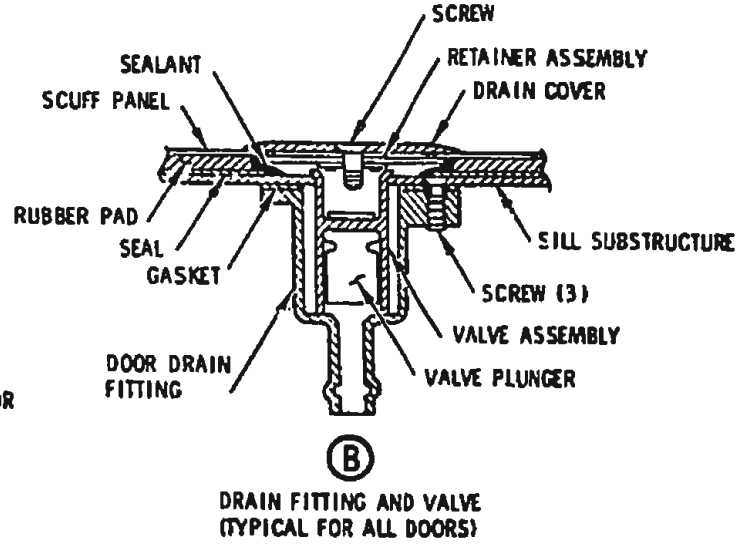
3. Cargo Door Sill Drainage

R A drainage system is provided for the (C-1) and (C-2) cargo
R compartment door sills. The basic system is similar for each compartment.

The aft (C-3) cargo compartment door sill area is drained by holes drilled in the door sill and cap assembly. Water is diverted to the inside of the fuselage and drains overboard through the drain valves located in the lower fuselage.

The drainage system for the forward and center cargo compartment door sills is located in zones 124 and 154, immediately inboard of the sill area and below the cargo compartment floor panels. Floor panels in the door area must be removed to gain access to





NOTE

1. THIS VIEW TYPICAL FOR L1, 2, 3 AND R1, 2, 3 DOORS
2. L4 AND R4 DOOR SILL DRAINAGE SAME EXCEPT ONLY ONE DRAINAGE LOCATION PROVIDED FOR EACH DOOR SILL, NEAR AFT END OF SCUFF PANEL

M1-1300-53-056

R
R

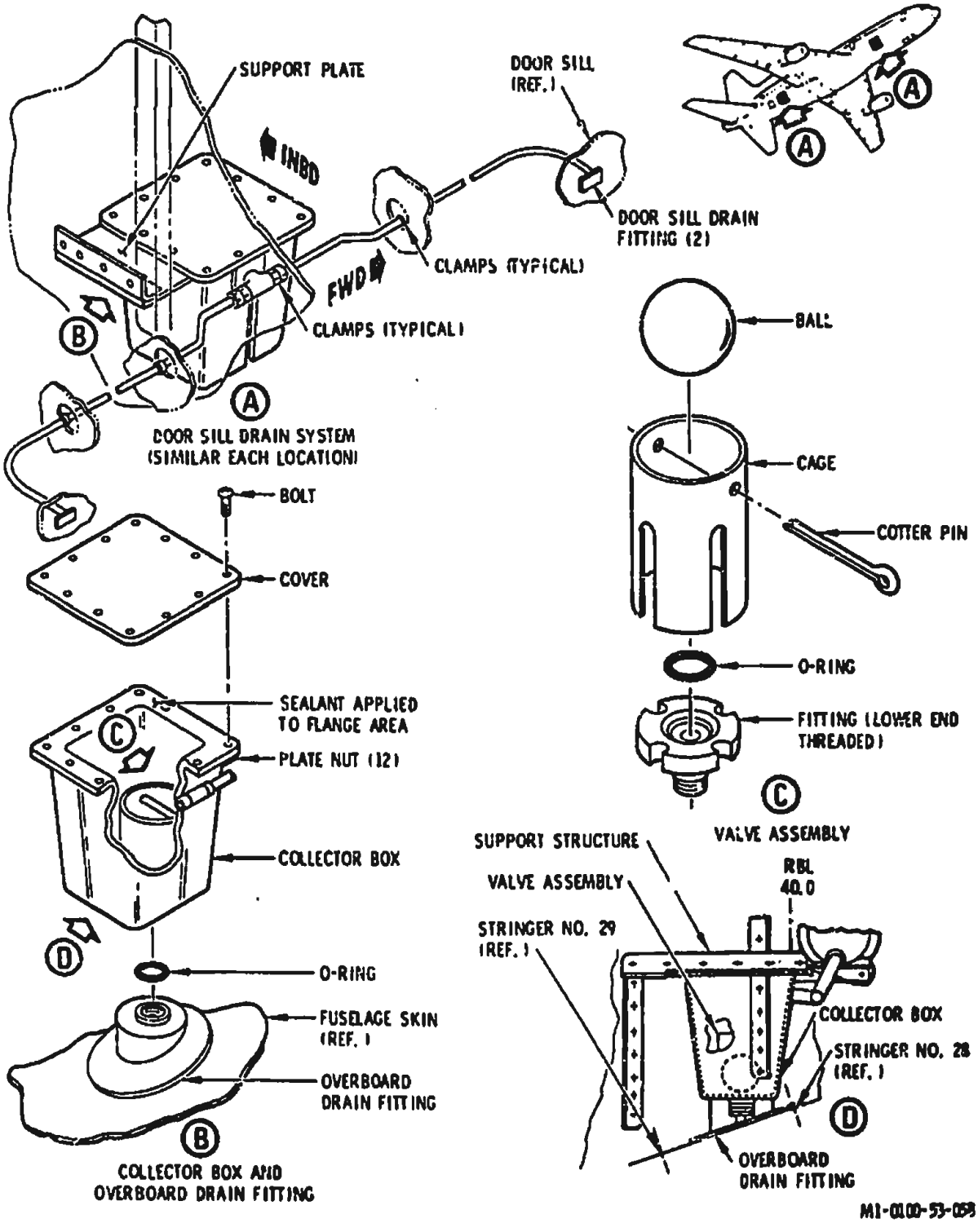
Passenger Door Sill Drainage
Figure 1

R
R
R
0018

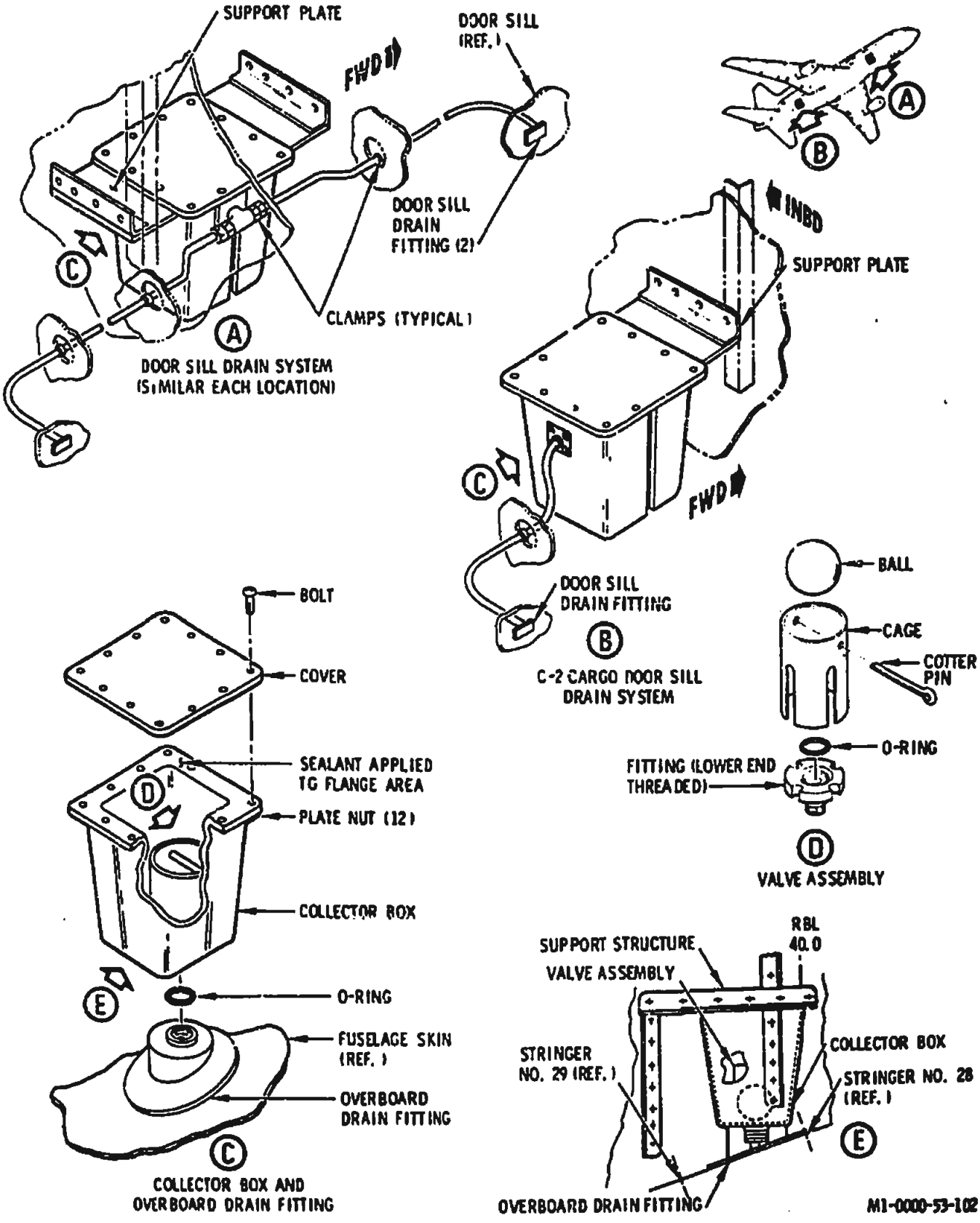
EFFECTIVITY: ALL

R the system components. The drain system consists of one or two
R drains located in the door sill, with associated hardware which
R connects to a collector box under the cargo floor panels. The
R collector box consists of a valve assembly and an overboard
R drain fitting. An O-ring provides a seal between the bottom of the collector box and the mating surface of the overboard drain fitting (Ref. Fig. 2).

The valve assembly is located inside the collector box, with the lower threaded end extending through to mate with the overboard fitting. The valve assembly consists of a tubular cage (with four slots at bottom) which is bonded to a fitting. A hollow nylon ball is retained inside the cage (with cotter pin) and seats on an O-ring installed in the upper end of the fitting. When the aircraft is unpressurized, gravity will keep the ball on the O-ring at all times, unless water is entering the collector box. With the entry of water, the ball will float or rise off the seal and allow water to drain overboard. When the aircraft is pressurized, differential pressure forces the ball against the O-ring to form a seal.



Cargo Compartment Door Sill Drainage
Figure 2



R R Cargo Compartment Door Sill Drainage
Figure 2

R EFFECTIVITY: 032-999
R R
001B

PASSENGER DOOR SILL DRAIN VALVE - REMOVAL AND INSTALLATION

1. General

Water drainage valves are provided in the door sills of each of the eight passenger doors in the main passenger cabin. The instructions which follow are applicable for all valve locations.

2. Referenced Procedures

	20-51-04	Environmental Sealing
	52-12-00	Door Actuation System - Description and Operation
R	53-15-67	Cargo Door Sill Drain Lines - Maintenance Practices

3. Removal/Installation

A. Removal

(1) Open applicable door to gain access to door sill area (Ref. 52-12-00).

(2) Loosen drain cover retaining screw (Ref. Fig. 401). Do not remove screw at this time.

(3) Move loosened assembly (drain cover and retainer assembly) forward or aft sufficiently that retainer assembly can be removed through hole in scuff plate.

(4) Remove assembly and further disassemble items, if required.

(5) Press inward on tangs of drain valve and pull upward to remove from door drain fitting and door sill substructure.

B. Installation

(1) Clean entire drain fitting area of foreign material.

(2) Check that drain tubing from door drain fittings to overboard drain fitting is free of foreign material.
R Clean as required (Ref. 53-15-67).

(3) Check condition of sealant (around drainage hole) between scuff panel and door sill substructure. Repair as required (Ref. 20-51-04).

(4) Check drain valve plunger for freedom of movement within valve housing.

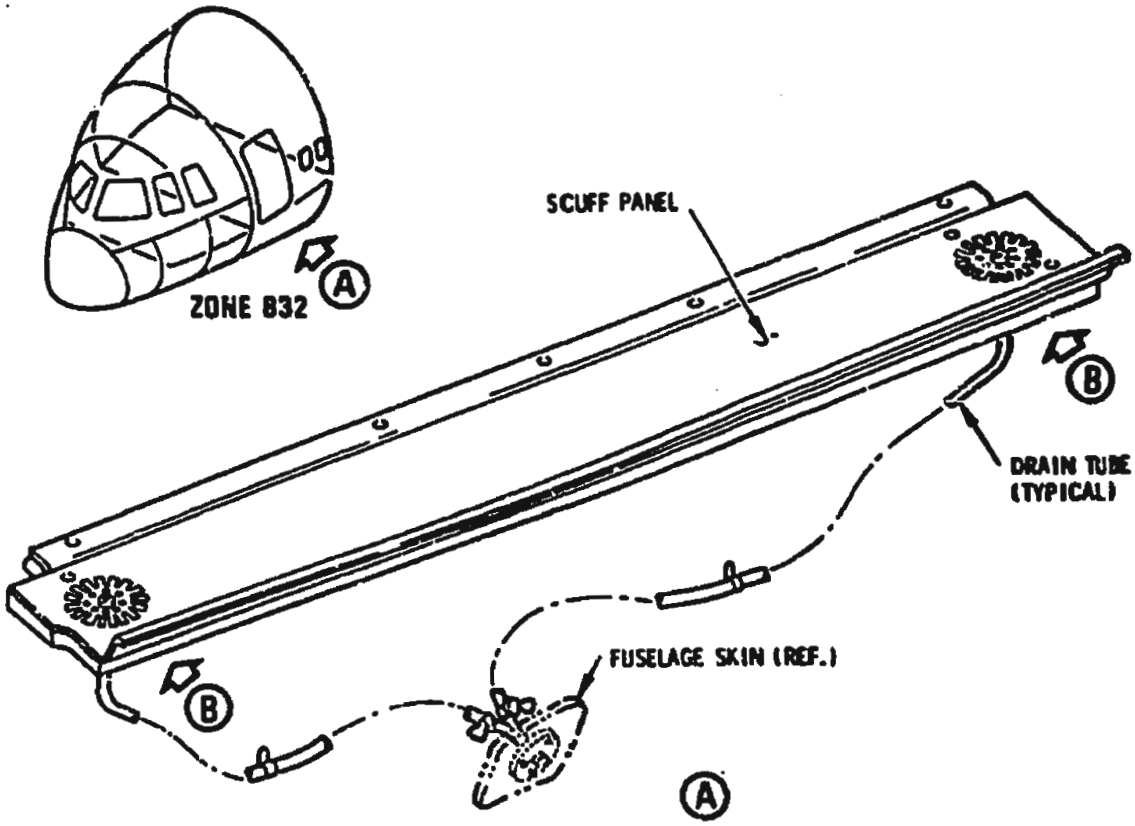
(5) Press inward on tangs of drain valve and insert into cavity until valve bottoms on drain valve fitting.

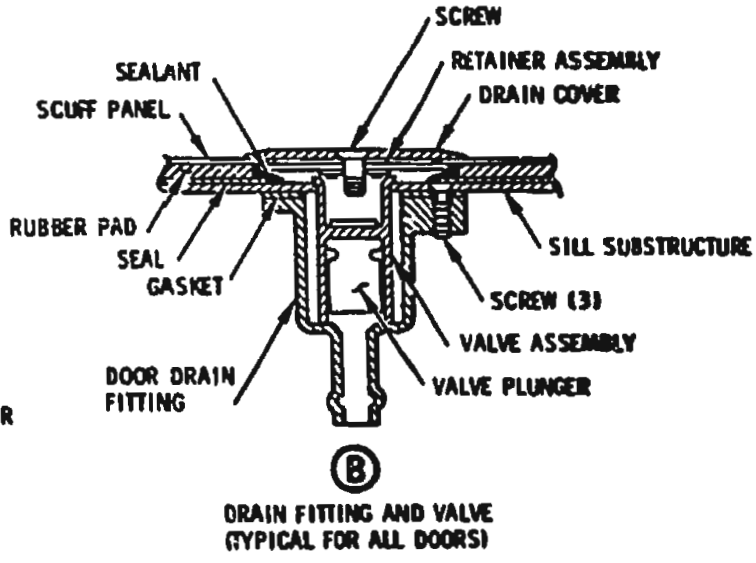
(6) Clean drain cover and loosely reassemble with retainer assembly.

(7) Insert retainer assembly to underside of scuff panel with ends of retainer aligning with notches in rubber pad.

(8) With retainer assembly nesting properly in scuff plate hole, tighten drain cover retaining screw.

(9) Close door (Ref. 52-12-00).





NOTE

1. THIS VIEW TYPICAL FOR L1, 2, 3 AND R1, 2, 3 DOORS
2. L4 AND R4 DOOR SILL DRAINAGE SAME EXCEPT ONLY ONE DRAINAGE LOCATION PROVIDED FOR EACH DOOR SILL, NEAR AFT END OF SCUFF PANEL

M1-1300-53-056

R R Passenger Door Sill Drain Valve - Removal and Installation
Figure 401

R R EFFECTIVITY: ALL

001B

R CARGO DOOR SILL DRAIN LINES - MAINTENANCE PRACTICES

R 1. General

R This section describes procedures for access to and cleaning of
R cargo door sill drain lines, as well as checking for proper
R drainage after cleaning.

R 2. Referenced Procedures

R	25-52-04	Ball Mat Assembly - Removal and Installation
R	25-52-06	Self-Lifting Drive Assembly - Removal and Installation
R	25-52-08	Threshold Restraint Assembly - Removal and Installation
R	25-52-10	Transverse Guide/Stop Assembly - Removal and Installation
R	25-52-11	Longitudinal Guide/Stop Assembly - Removal and Installation
R	25-52-12	Center Entry Guide/Stop Assembly - Removal and Installation
R	25-52-14	Retraction Actuator Assembly - Removal and Installation
R	25-52-19	Threshold Guide/Restraint Crankshaft - Removal and Installation
R	25-52-27	Transverse Guide Impactor Assembly - Removal and Installation
R	53-15-67	Cargo Door Sill Drain Valve - Removal and Installation

R 3. Equipment and Materials

R Compressed air source (Shop air)

R Mirror

R Solvent gun

R 1,1,1 Trichloroethane, Federal Specification O-T-620, or
R equivalent

R Vacuum source, suitable for liquid pick-up

R 4. Maintenance Practices

R A. Removal

R (1) Remove cargo handling and storage system components
R attached to applicable floor panels or access panels
R covering door sill drain collector box, according to
R procedures outlined in Paragraph 2.

R (2) On aircraft 001-031 without SB53-100,
R remove entire floor panel covering door sill drain
R collector box.

R (2) On aircraft 001-031 with SB53-100 and 032-036,
R remove access panel covering door sill drain collector
R box.

R (3) Remove collector box lid (Ref. 53-15-67).

R B. Cleaning

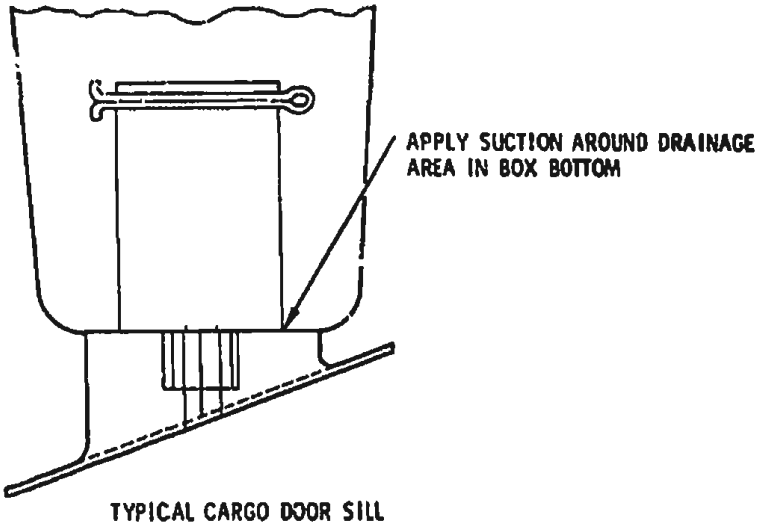
R WARNING: USE TRICHLOROETHANE IN WELL VENTILATED AREA. DO
R NOT INHALE VAPOR, AND AVOID FLUID CONTACT WITH
R SKIN. PROLONGED EXPOSURE MAY RESULT IN
R UNCONSCIOUSNESS OR LUNG OR SKIN IRRITATION.

R CAUTION: ON AIRCRAFT WITH TRANSLUCENT PLASTIC DRAIN LINE
R TUBING, DO NOT SUBJECT TUBING TO EXCESSIVE
R PRESSURE, OR TUBING MAY RUPTURE.

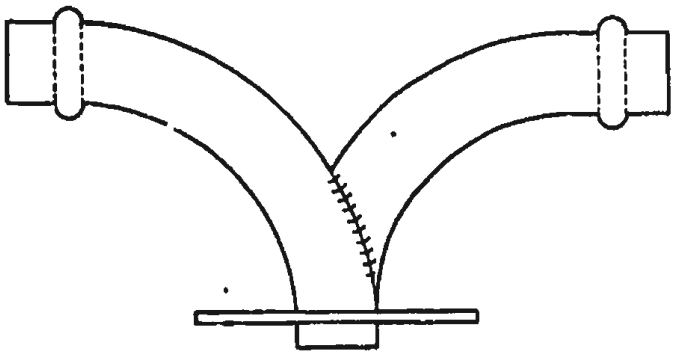
R (1) On aircraft with square 'T' fitting (Ref. Fig. 201) on
R collector box,
R use solvent gun and 1,1,1 Trichloroethene to remove
R debris from line, blowing from drain line entrance (in
R sill area) toward collector box, and verify collector
R leg of 'T' fitting is clear.

R (1) On aircraft with radiused 'T' fitting (Ref. Fig. 201)
R on collector box,
R use solvent gun and 1,1,1 Trichloroethene to remove
R debris from line, blowing from drain line entrance (in
R sill area) toward collector box.

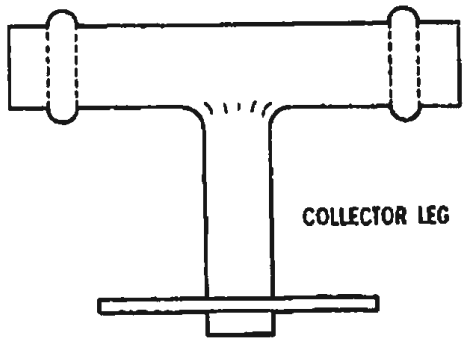
R (1) On aircraft without 'T' fitting on collector box,
R use solvent gun and 1,1,1 Trichloroethene to remove



TYPICAL CARGO DOOR SILL DRAIN LINE COLLECTOR BOX



TYPICAL RADIUSED-TYPE 'T' FITTING



TYPICAL SQUARE-TYPE 'T' FITTING

M1-0001-53-105

R
R Cargo Door Sill Drain Line Cleaning
Figure 201

EFFECTIVITY: ALL

001B

R debris from line, blowing from collector box end of
R tubing toward drain line entrance in door sill area.

R CAUTION: SOLVENT REMAINING IN DOOR SILL AREA MAY CAUSE
R CORROSION.

R (2) Using vacuum source suitable for liquid pick-up,
R carefully remove all solvent from door sill area.

R (3) Using vacuum source suitable for liquid pick-up,
R carefully remove debris from bottom of collector box
R (Ref. Fig. 201).

R C. Inspection/Check

R (1) Check that drain lines and collector box are clear of
R debris as instructed in 53-15-67.

R NOTE: In sub-freezing temperatures, isopropyl alcohol
R may be substituted for water as a test liquid.

R (2) Verify collector box drain hole is clear of debris.

R D. Installation

R (1) Reinstall collector box lid (Ref. 53-15-67).

R (2) Reinstall access panel or floor board covering
R collector box.

R (3) Reinstall cargo handling and storage system components
R removed in Para. 4A(1), according to procedures
R outlined in Paragraph 2.

CARGO DOOR SILL DRAIN VALVE - REMOVAL AND INSTALLATION

1. General

This procedure provides information for the removal and installation of the drain valve assembly and for replacement of some of the components thereof. In addition, information is given for checking for presence of foreign material in the drain fittings and tubes.

2. Equipment and Materials

Sealing Compound - PR 1422, Class A-2 (Products Research Corp), or equivalent

R Cleaner - MIL-T-81533A, 1-1-1, Trichloroethane, or equivalent

Silicone Parting Agent - RAM 225 (RAM Chemicals, Inc.), or equivalent

R Cement, General Purpose - LCM30-2084A (3-M Co.), or equivalent

R O-ring

R Pin, cotter

R Putty, commercial grade

R Petrolatum - Specification VV-P-236 or equivalentThin Edge Tool,
R putty knife, or equivalent

R Scraper, Wood or plastic

R Spanner Wrench, or equivalent

R Clean cloth

3. Referenced Procedures

R	6-30-00	Major Zone 800 - Doors
	6-50-00	Interior Panels, Zone 124, Forward Cargo Compartment Floor
	6-50-00	Interior Panels, Zone 154, Center Cargo Compartment Floor

4. Removal/Installation

A. Removal

(1) Open door of forward or center cargo compartment as
R required and tag door control (Ref. 6-30-00).

(2) Immediately inside door sill, remove floor panels as required (Ref. 6-50-00 and 53-24-01).

(3) Remove 12 bolts which attach cover to collector box and retain for reuse (Ref. Fig. 401).

(4) Remove cover from collector box.

NOTE: Use thin edge tool (putty knife or similar) to break seal around sides of cover.

(5) Temporarily reinstall four bolts which attach collector box to support plate.

(6) With drainage system intact, verify that sill fittings, tubes and collector box tee are open and free of foreign material. This check can be made as follows:

(a) Use putty, or equivalent, to form a dam near each sill drain fitting.

R (b) Check drain system by maintaining water level to top of opening of sill drain fitting.

(c) While maintaining water level, observe flow of water into collector box and out through drain valve and overboard drain.

(d) If water flow is satisfactory, check other door sill fitting and drain tube in the same manner.

R NOTE: If restricted flow is noted, the obstruction must be located and removed. Remove tube clamps at fittings and at support locations as required to prevent damage to tubes or fittings.

(7) Using suitable spanner wrench or equivalent, remove valve assembly from overboard drain fitting.

(8) Remove and discard O-ring located on underside of collector box.

(9) If the removed valve assembly is to be repaired and reinstalled, proceed as follows.

(a) Remove cotter pin which retains ball.

(b) Remove ball from cage and check for condition. Replace as required.

NOTE: Check ball for cracks, mineral deposits on surface or out-of-round condition.

(c) Remove O-ring from groove in valve assembly fitting and discard.

NOTE: The O-ring is installed with cement in the groove area. Use care during removal to prevent damage to groove.

R CAUTION: USE CLEANING MATERIALS IN WELL-VENTILATED
R AREA. DO NOT INHALE VAPORS OR ALLOW CLEANING
R MATERIALS TO COME IN CONTACT WITH THE SKIN.
R KEEP CLEANING MATERIALS AWAY FROM OPEN
R FLAMES.

R (d) Clean groove in fitting using clean cloth
R moistened with cleaner. Wipe dry with clean dry
R cloth.

(e) Apply light coat of cement to groove and install new O-ring, pressing firmly into groove.

R NOTE: Remove all cement which may extrude from
R groove using a wood or plastic scraper. Assure that cement is not present on the O-ring seating surface.

(f) Install ball in cage.

(g) Install cotter pin in cage.

B. Installation

(1) Using plastic or wood scraper, remove sealant from flange area of collector box and cover. Remove remainder of sealant, using clean cloth dampened with cleaner.

(2) Remove four bolts temporarily installed in Step 4A(5).

(3) Place new or repaired valve assembly in position in collector box (Ref. Fig. 401).

(4) Lubricate O-ring with Petrolatum and install over threaded end of valve assembly on underside of collector box.

(5) With collector box in approximate position, screw valve assembly into overboard drain fitting until contact is made with O-ring.

(6) Temporarily reinstall four bolts removed in Step 4B(2).

(7) Using spanner wrench, or equivalent, tighten valve assembly sufficiently to prevent water leakage.

(8) Perform water leakage check by manually holding ball against O-ring, adding water and checking for leakage around O-ring between collector box and overboard drain fitting.

NOTE: If required, tighten valve assembly in small increments and recheck each time until leakage stops.

(9) Remove four bolts temporarily installed in Step 4B(6).

(10) Using clean cloth dampened with cleaner, remove any sealant residue from collector box flange area and from cover. Wipe surfaces with clean, dry cloth.

R (11) Apply brush coating of sealing compound to collector box flange.

(12) Apply thin coating of silicone parting surface agent to contact area of cover.

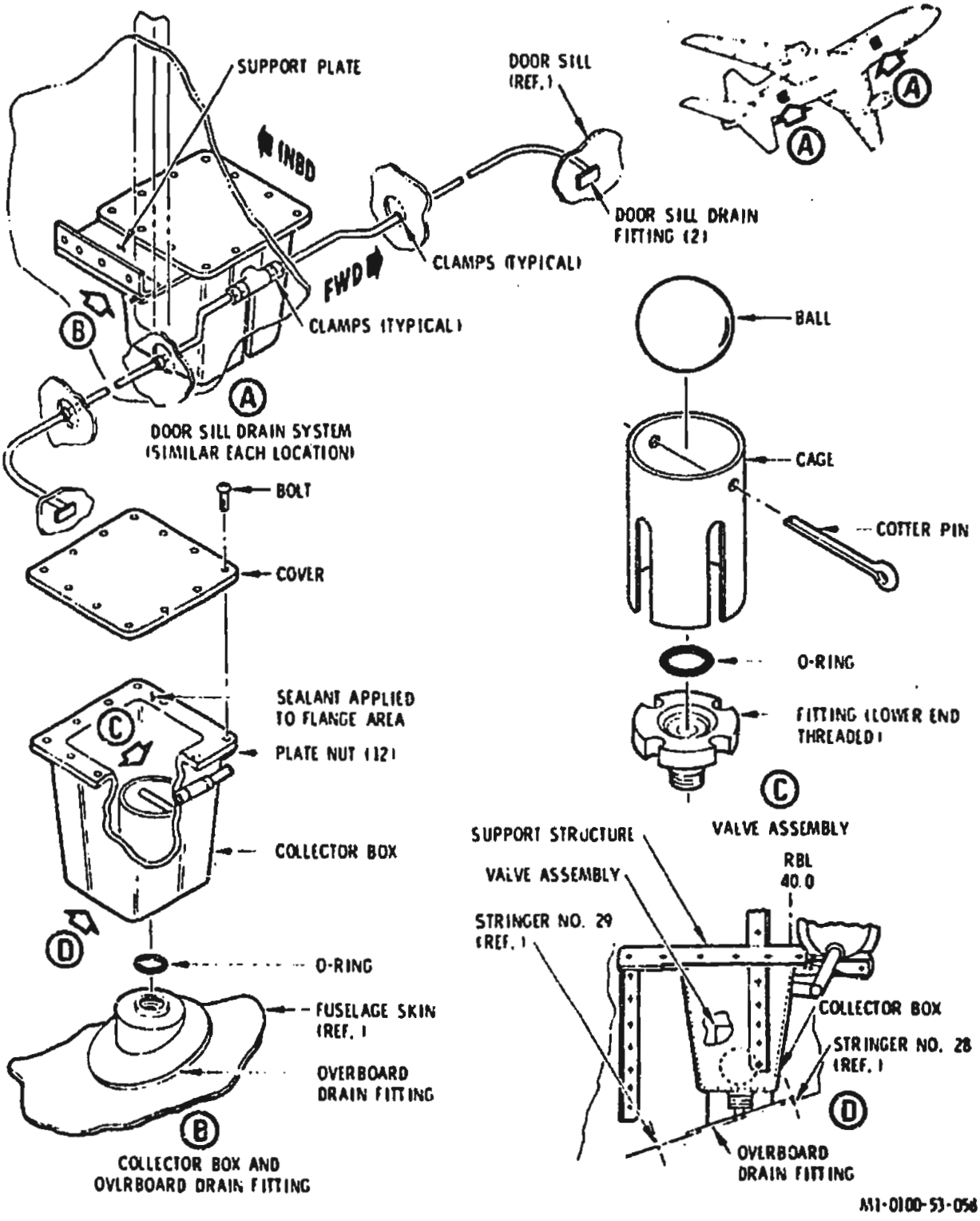
(13) Place cover in position on collector box, aligning all attachment holes.

(14) Install bolts and tighten, alternating from side-to-side.

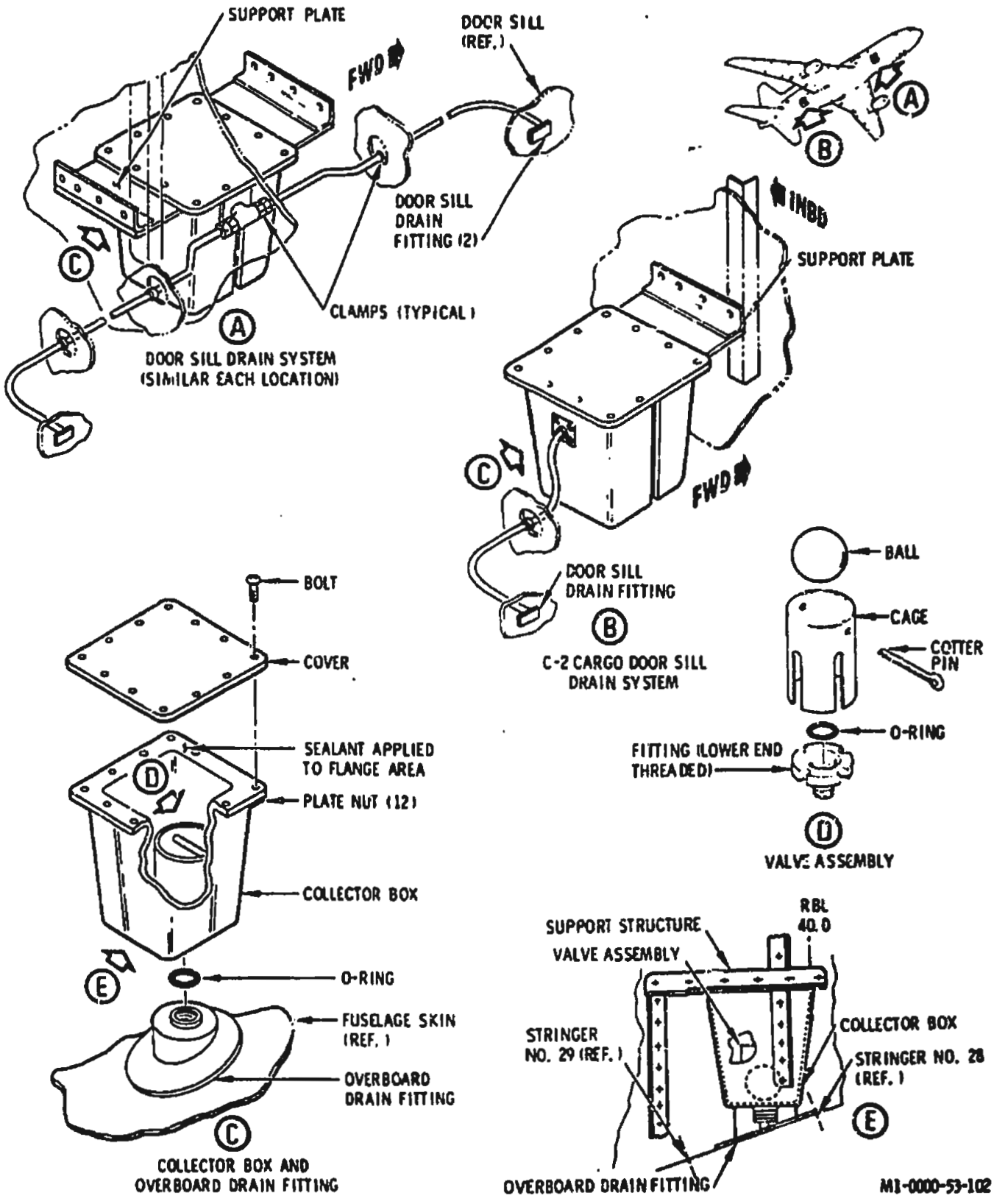
R R (15) Remove excess extruded sealant using a wood or plastic scraper.

(16) Reinstall floor panels (Ref. 53-24-01).

R (17) Remove tag from door control tagged in Step 4A(1) and close door.



Drainage System Valve Assembly - Removal and Installation
Figure 401



R R Drainage System Valve Assembly - Removal and Installation
Figure 401

PASSENGER CABIN WINDOW FRAMES - DESCRIPTION AND OPERATION

1. General

The cabin window frames are made of machined and shot-peened one-piece 7075-T736 aluminum alloy forgings. The window frames, located at zones 230, 240, 250, 260, and 270, provide support for the passenger cabin window assemblies.

CABIN FLOOR SUPPORT - DESCRIPTION AND OPERATION

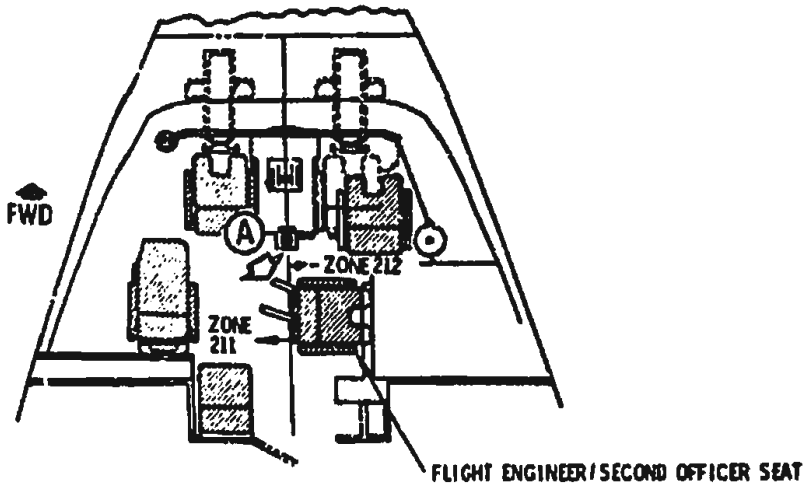
1. General

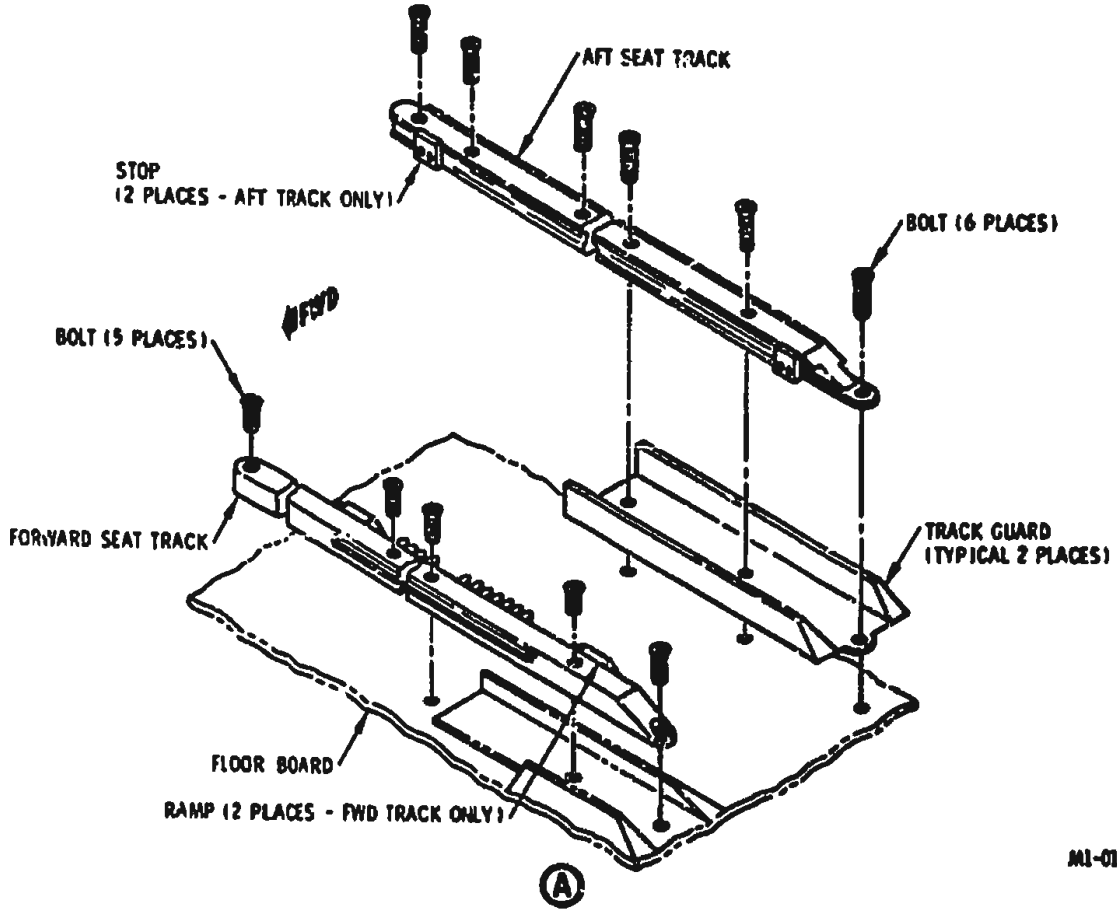
The floor structure consists of transverse beams at each fuselage frame, except over the wing box structure and main landing gear wheel wells. Over the wing center box structure the floor is supported by longitudinal floor beams attached to the top of the wing box. Over the main landing gear wheel wells, the floor and the pressure deck below the floor are supported by transverse beams, extending from side to side with intermediate support by the keelson shear beams.

FLIGHT ENGINEER/SECOND OFFICER SEAT TRACKS DESCRIPTION AND OPERATION

1. General

Two floor-mounted seat tracks are provided for the Flight Engineer/Second Officer seat. The tracks are attached to the floor panels and floor support structure with bolts (Ref. Fig. 1). The tracks extend from the Flight Engineer/Second Officer console area diagonally inboard and forward. The aft track extends to LBL 13.00 and the forward track extends to LBL 6.00. The tracks are designed for use with either the powered or manually operated seat. Two stops are provided near each end of the aft track to limit seat travel on the seat tracks.





R Flight Engineer/Second Officer Seat Tracks
R Description and Operation
R Figure 1

R # FLIGHT ENGINEER/SECOND OFFICER SEAT TRACKS
R # REMOVAL AND INSTALLATION

R 1. Referenced Procedure

R 25-11-03 Flight Engineer/Second Officer Seat Assembly - Removal and Installation

R 2. Removal/Installation

R A. Removal

R (1) Remove Flight Engineer/Second Officer seat assembly (Ref. 25-11-03).

R (2) Remove six bolts which attach aft seat track to floor panels. Retain bolts for reuse (Ref. Fig. 401).

R NOTE: Each seat track (forward and aft) has three different length bolts. Identify bolt locations to assure bolts are reinstalled at correct locations.

R All seat track attachment bolts (6) for the aft track are 0.635 inch diameter. The forward seat track attachment bolts (5) are 0.508 inch diameter.

R (3) Remove aft seat track and guard from floor panels.

R (4) Remove five bolts which attach forward seat track to floor panels. Retain bolts for reuse.

R (5) Remove forward seat track and guard from floor panels.

R B. Installation

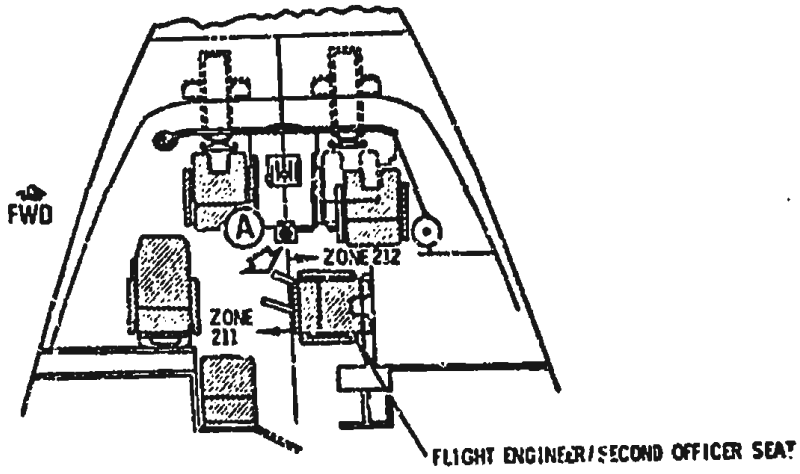
R (1) Place forward seat track and guard on floor panels in alignment with bolt holes.

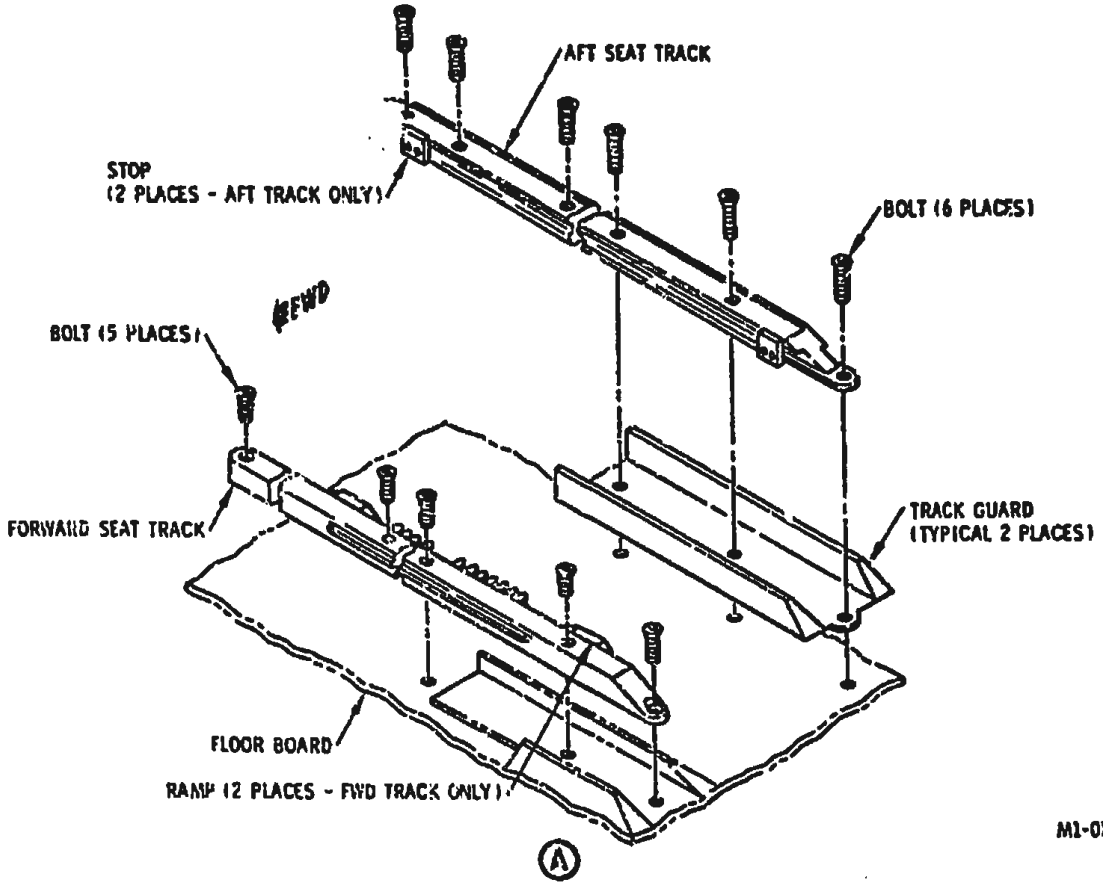
R (2) Install five bolts (0.508 inch diameter). Verify that correct length bolt is installed at proper location (Ref. Fig. 401).

R (3) Place aft seat track and guard on floor panels in alignment with bolt holes.

R (4) Install six bolts (0.635 inch diameter). Verify that correct length bolt is installed at proper location.

R (5) Install flight Engineer/Second Officer seat assembly
R (Ref. 25-11-03).





R Flight Engineer/Second Officer Seat Tracks
R Removal and Installation
R Figure 401

R EFFECTIVITY: ALL
R
001B

FLOOR PANELS, FLIGHT STATION, PASSENGER COMPARTMENT, AND GALLEY - DESCRIPTION AND OPERATION

1. General

The flight station, passenger, and galley compartment floor panels are of sandwich construction consisting of either metallic or glass laminate skins bonded to a center honeycomb core. The floor panels are removable, vary in size and shape, and are attached to the floor support structure with screws.
R Sound absorbing, adhesive (one side) vinyl foam tape or silicone
R sponge rubber strips are cemented to floor support structure
R along the perimeter of the floor panels. All floor panel joints are sealed to prevent leakage of fluid to the underneath structure and equipment.

For information on floor covering, refer to:

Flight station	25-12-00
Passenger compartment	25-25-00
Galley	25-33-00
Lavatories	25-43-00

R The flight station floor panels extend from FS 128.00 to FS
R 253.00. The upper level floor panels, located forward of FS
R 176.00, are of sandwich construction consisting of metallic or
R glass laminate skins bonded to a compressed aluminum alloy foil
R core. The lower level floor panels, located between FS 176.00
R and FS 253.00, are of sandwich construction consisting of
R metallic skins or glass laminate skins bonded to a fibrous nylon
R honeycomb core.

R The passenger compartment floor panels extend from FS 253.00 to FS 1792.00. The aft lavatory floor panels are located aft of the emergency doors (P-5L and P-5R), and follow the contour of the aft pressure bulkhead. These floor panels extend from FS 1792.00 to FS 1860.00. The various floor panels in the passenger compartment and lavatory areas are of sandwich
R construction consisting of metallic skins or glass laminate
R skins bonded to a fibrous nylon honeycomb core.

The floor panels, which are located between FS 983.00 and FS 1363.00, are electrically heated. Heating elements, insulation blankets, thermoswitches, and thermosensors are attached to the underside of the floor panels. The electrically heated area is above the wing center section, main landing gear wheel wells, and the hydraulic service center. Since these areas are unpressurized, there is no circulation of heated air. For complete information on floor heating, refer to 21-43-00.

R The galley compartment floor panels extend from FS 703.00 to FS
R 943.00, and from LBL 44.00 to RBL 44.00. The floor panels in
R this area are of sandwich construction consisting of glass
R laminate skins bonded to a fibrous nylon honeycomb core.

FLIGHT STATION FLOOR PANELS - REMOVAL AND INSTALLATION

1. General

This procedure covers the lower level floor panels in the flight compartment. The basic removal and installation procedure is similar since all panels are attached to floor support structure with screws. Figure 401 shows the various floor panels, and the typical sectional views show means of attachment, support structure, and sealing requirements.

2. Equipment and Materials

Sealing Compound - PR 1227 (Products Research and Chemical Co.), or equivalent

Tape (Nylon Lacing) - MIL-T-43435, Type II, Finish C, Size 3, or equivalent

R Tape (SJ-8562) - Polyurethane 0.0085 in. thick. Various widths as required.

3. Referenced Procedures

20-51-04	Environmental Sealing of Model L-1011 Airplane
25-11-01	Captain Seat Assembly - Removal and Installation
25-11-02	First Officers Seat Assembly - Removal and Installation
25-11-03	Flight Engineer/Second Officers Seat Assembly - Removal and Installation
25-11-04	First Observers Seat Assembly - Removal and Installation
25-11-05	Second Observers Seat Assembly - Removal and Installation
25-12-01	Flight Compartment Floor Covering - Removal and Installation
35-11-01	Fixed Breathing Oxygen Cylinder - Removal and Installation
53-21-02	Flight Engineer/Second Officer Seat Tracks - Removal and Installation

4. Removal/Installation

A. Removal

(1) Remove all items of flight compartment equipment (crew seats, observer seats, seat tracks, floor panel
R covering) as necessary to gain access to panel(s) to be
R removed (Ref. 25-11-01 through 25-11-05, 25-12-01,
R 35-11-01 and 53-21-02 as appropriate).

(2) Remove polyurethane tape which seals floor panel joints (Ref. Fig. 401).

(3) In those areas requiring nylon tape and sealant in floor joints (Ref. Fig. 401), grasp loose end of nylon tape (at corner) and slowly pull sealant from joint.

(4) Remove floor panel attachment screws. Retain screws for reuse.

(5) Remove floor panel.

B. Installation

NOTE: For information regarding cleaning of floor panels, wet installation of screws, and application of nylon
R tape and sealant (Ref. 20-51-04).

(1) Remove sealant from floor panels with plastic scraper or equivalent. With clean cloth dampened with suitable cleaning solvent, clean joint edges and underside of panel which contacts Ensolite vinyl foam or silicone sponge rubber tape. Remove solvent film with clean dry cloth.

R WARNING: ASSURE THAT CLEANING OPERATIONS ARE PERFORMED WITH
R PROPER VENTILATION.

(2) Check condition of Ensolite vinyl foam and/or silicone sponge rubber tape.

NOTE: If condition requires replacement, replace with silicone sponge rubber in thickness and width required for location.

(3) Check floor panels for delamination, core damage, and general condition.

(4) Position floor panel on support structure.

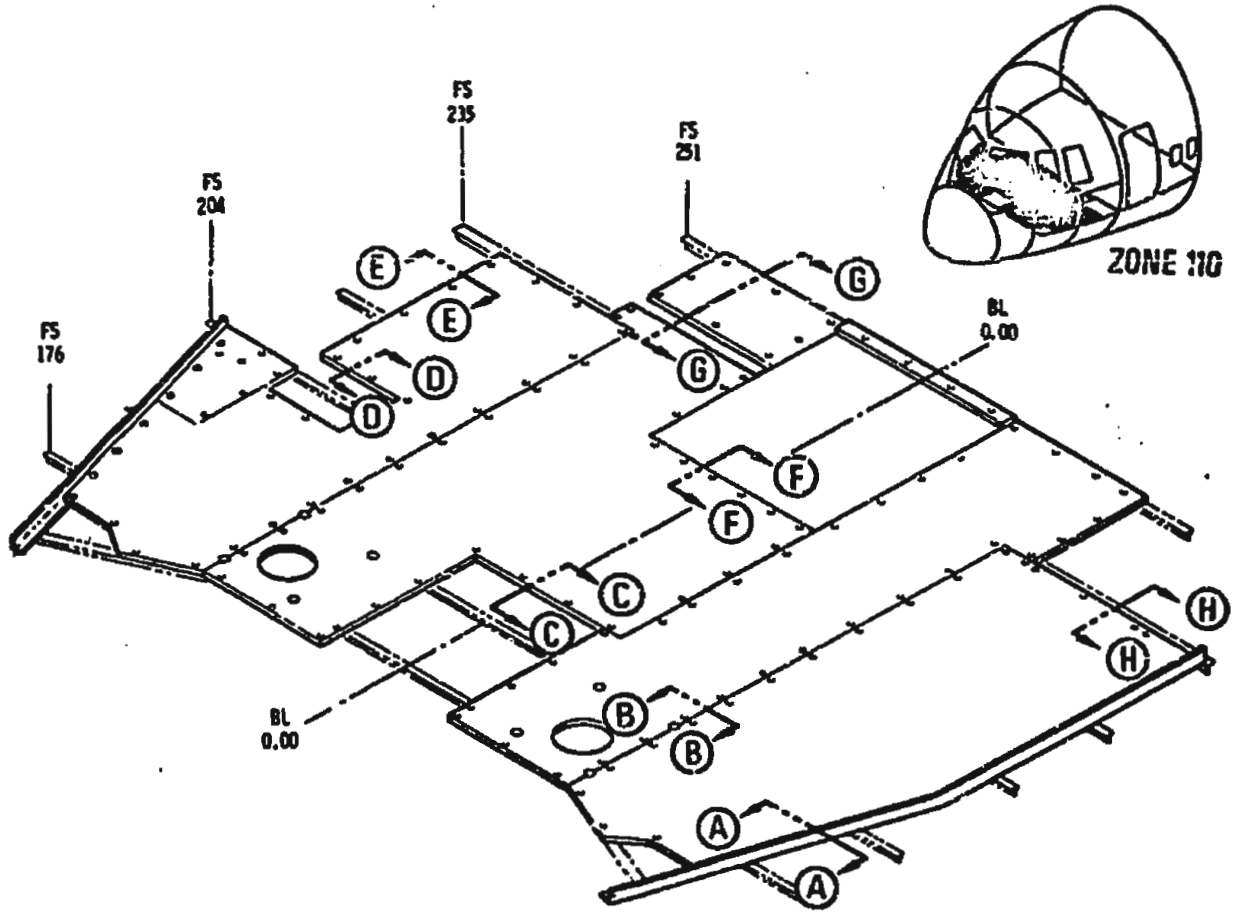
(5) Wet install floor panel attachment screws. Torque screws one time to 12 to 15 pound inch.

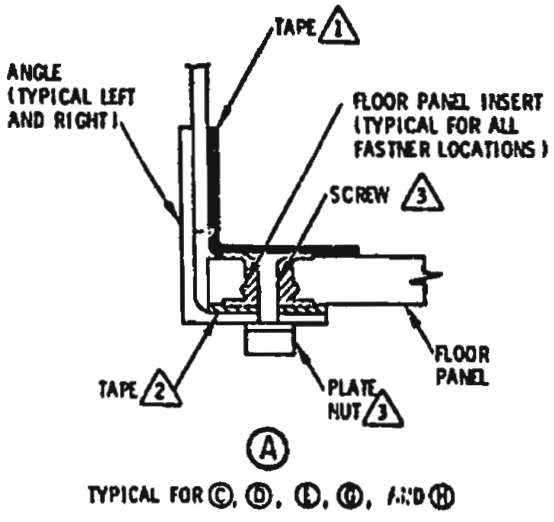
NOTE: Do not retorque screws as vinyl foam and sponge rubber acquires a set.

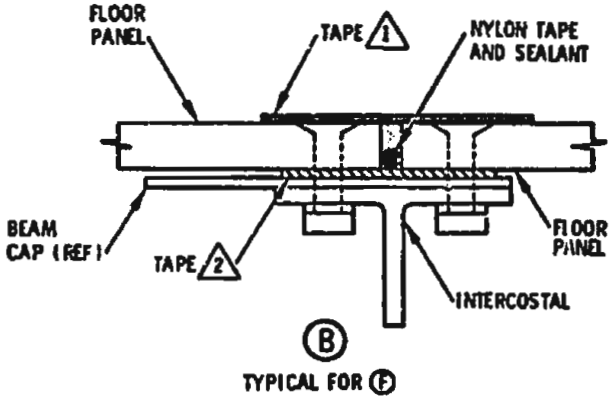
(6) For joints requiring nylon tape and sealant, beginning at corner of panel, install nylon tape at base of joint gap, terminating tape at each corner. Fill remainder of gap (above tape) with sealing compound, leaving ends of tape accessible above sealant.

(7) Apply polyurethane tape of proper width to seal all effected joints (Ref. Fig. 401).

R (8) Reinstall all items of equipment removed in Step 4A(1).



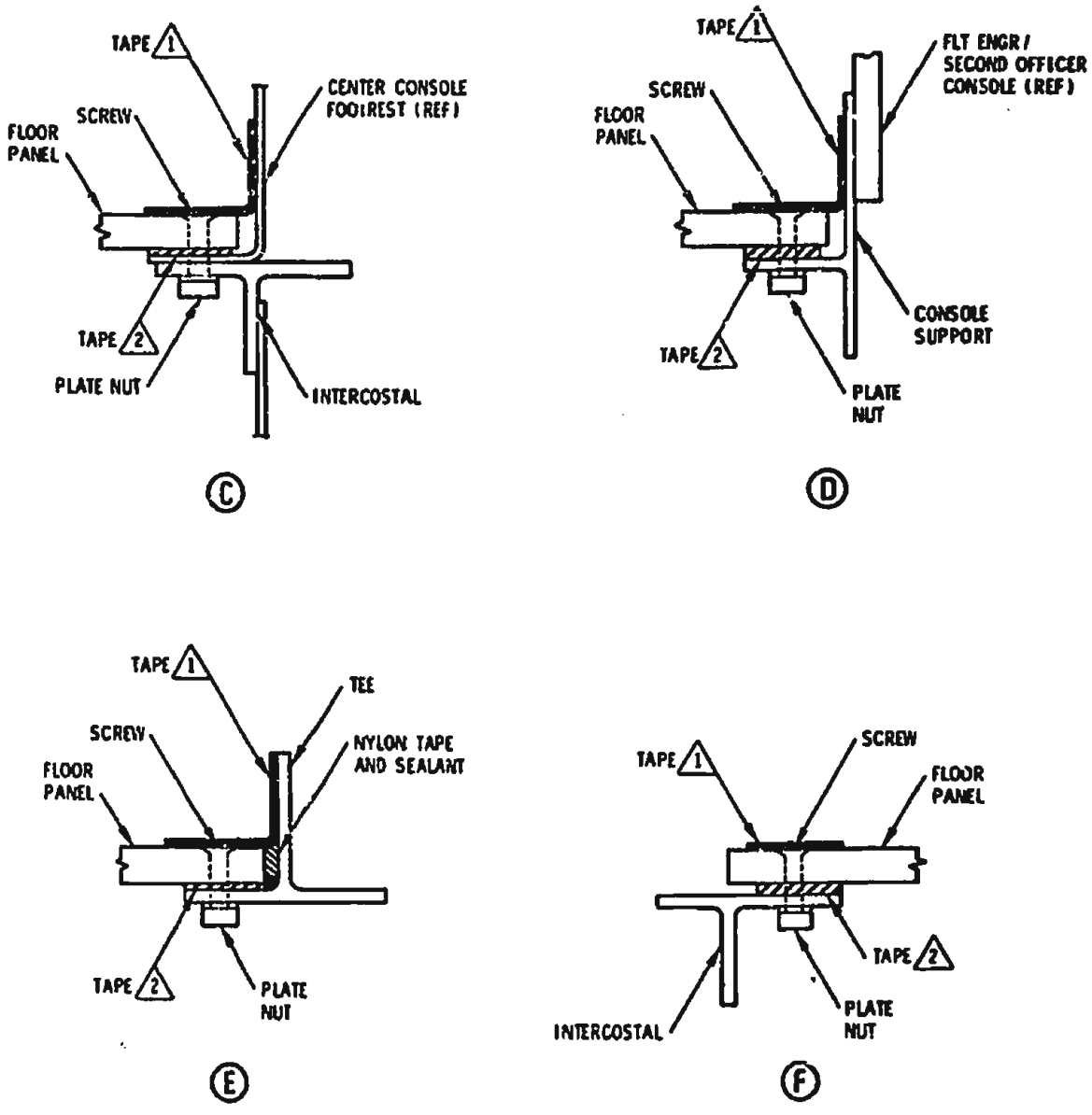




M1-0100-53-040

R Flight Station Floor Panels - Removal and Installation
R Figure 401 (Sheet 1)

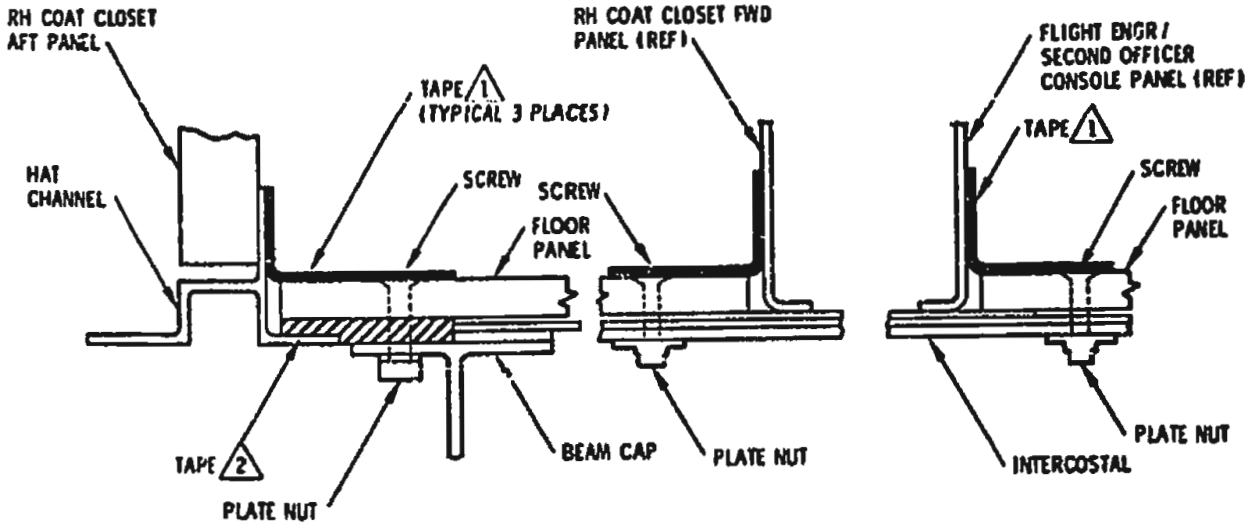
R EFFECTIVITY: ALL
R
001B



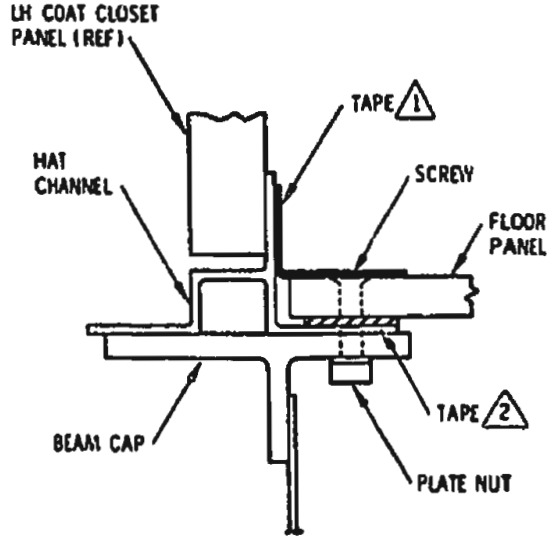
MI-0100-53-041

R Flight Station Floor Panels - Removal and Installation
R Figure 401 (Sheet 2)

R EFFECTIVITY: ALL
R
001B



(G)



(H)

NOTE

1. POLYURETHANE TAPE 0.0085 INCH THICK, WIDTH AS REQUIRED FOR EACH LOCATION. THICKNESS OF TAPE EXAGGERATED FOR CLARITY
2. INSOLITE VINYL FOAM OR SILICONE SPONGE RUBBER, 1/16 TO 5/16 INCH THICK, 1 TO 1.75 INCHES WIDE
3. SCREWS AND PLATE NUTS USED AT ALL FLOOR PANEL FASTENER LOCATIONS
4. USE OF NYLON TAPE AND SEALANT OPTIONAL AT ALL JOINT CAPS NOT SPECIFIED

M1-0001-53-042

R Flight Station Floor Panels - Removal and Installation
R Figure 401 (Sheet 3)

PASSENGER COMPARTMENT FLOOR PANELS REMOVAL AND INSTALLATION

1. General

Floor panels throughout passenger compartment are supported by transverse beams, seat tracks, and intermediate longitudinal intercostals attached to transverse beams. Various floor panels are attached to support structure with screws.

R Basic removal and installation procedure is similar for all
R panels. Principal differences relate to methods of sealing of
R floor panel joints in specified areas and to electrically heated
R panels located between FS 980 and FS 1363. Figure 401 indicates
R those areas which have special or more stringent sealing
R requirements. Figure 402 shows typical cross sectional views of
R floor support structure and floor panel joints in longitudinal
R and transverse direction. These views show differences in
R sealing requirements in various areas. It should be noted that
R fuselage station lines which establish area sealing requirements
R do not coincide with end joints of many panels. Therefore, for
R all floor panels so affected, it is optional whether use of
R nylon tape and sealant is discontinued at specified fuselage
R station, or continued to end of panel.

R Figure 403 shows floor panels within the electrically heated
R area. Cross sectional views are shown in longitudinal and
R transverse directions, along with sealing, fastening and
R insulation requirements. Floor panels immediately forward of FS 1243, left and right sides, are retained on one side by channels which attach to support structure. This permits floor panels in indicated areas to float or move laterally with movement of structure. Sealing tape over fasteners provides floor panel movement, and extruded type seals are provided for floor joints in specific areas.

2. Equipment and Materials

Sealing Compound, PR 1227, Products Research and Chemical Co., or equivalent

Scraper Plastic

Clean cloth

Solvent Trichloroethane, MIL-T-81533A, or equivalent

Sealing Compound Filler, LCM40-2180C (1) Type I, or equivalent

Tape (Nylon Lacing), MIL-T-43435 TYPE II Finish C Size 3, or equivalent

R Polyurethane Tape, SJ-8562, 0.0085 inch thick, 3M Co., or
R equivalent

Pressure Sensitive Tape, 7355, Mystik Tape Co., or equivalent

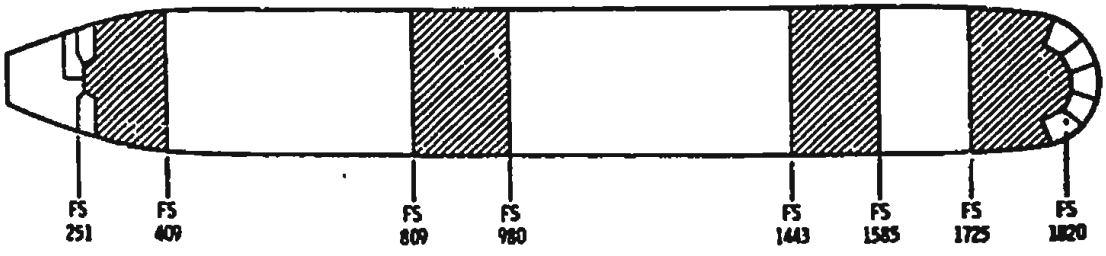
Rubber Silicone Sponge, Spec C-23-924, Kirkhill Rubber Co., or equivalent (Medium class material only)

3. Referenced Procedures

20-51-04	Environmental Sealing of Model L-1011 Airplane
21-43-00	Floor Heat System - Adjustment and Test
25-20-00	Passenger Compartment
25-25-05	Passenger Compartment Carpets

4. Removal/Installation

A. Removal



VIEW OF PASSENGER COMPARTMENT FLOOR
SHOWING AREAS REQUIRING NYLON TAPE & SEALANT FOR FLOOR JOINTS

NOTE USE NYLON TAPE & SEALANT AT ALL FLOOR JOINTS ON -500 AIRCRAFT

M1-2101-53-032

Passenger Compartment Floor Areas Requiring Special Seal Provisions
Figure 401

(1) Remove all items of passenger compartment equipment (seats, carpets etc.) as necessary to gain access to panel(s) to be removed (Ref. 25-20-00).

(2) Remove polyurethane tape from floor panel joints. Remove extruded type joint seals, if applicable.

(3) In those areas requiring nylon tape and sealant in floor joints (Ref. Fig. 401), grasp loose end of nylon tape (at corners) and slowly pull sealant from joints.

(4) Remove floor panel attachment screws. Retain screws for reuse.

R (5) On aircraft 001-031,
R lift electrically heated floor panel, zone 140 (Ref.
R Fig. 403) and disconnect electrical connector on
R underside of panel.

R (6) Remove floor panel.

B. Installation

NOTE: For information regarding cleaning of floor panels and application of nylon tape and sealant (Ref. 20-51-04).

(1) Remove sealant from floor panels with plastic scraper. Use clean cloth dampened with suitable cleaning solvent to clean joint edges and underside of panel which contacts Ensolite vinyl foam and/or silicone sponge rubber tape. Remove solvent film with clean dry cloth.

WARNING: ASSURE THAT CLEANING OPERATIONS ARE PERFORMED WITH PROPER VENTILATION.

(2) Check condition of Ensolite vinyl foam and/or silicone sponge rubber tape on floor support structure.

NOTE: If condition requires replacement, replace with silicone sponge rubber.

(3) Check floor panel for delamination, core damage, and general condition.

(4) Positon floor panel on support structure.

R (5) On aircraft 001-031,
R lift one edge of electrically heated panel and
R reconnect electrical connector on underside of panel
R (Ref. Fig. 403).

(6) On aircraft 001-031, before installing attachment screws, test and verify operation of electrically heated floor panels and thermal switches (Ref. 21-43-00).

(7) Install floor panel attachment screws. Torque screws one time to 20 to 25 pound inch.

NOTE: Do not retorque screws as vinyl foam and sponge rubber tape acquires a set.

(8) Beginning at corners for each side of panel, install nylon tape at base of joint gap, terminating tape at each corner. Fill remainder of gap (above tape) with sealing compound, leaving ends of tape accessible above sealant.

(9) When sealant has cured, apply proper width polyurethane tape over all longitudinal and transverse joints (Ref. Fig. 402 and 403).

(10) Reinstall all items of equipment removed in 4A(1).

5. Lavatory Entrance Floor Removal/Installation

A. Removal

(1) Open lavatory door.

(2) Remove filler, and retain for reinstallation (Ref. Fig. 404).

(3) Remove threshold by removing attaching screws.

(4) Remove carpet floor covering and polyester film aft of FS1763.5 as required for access and save for reinstallation (Ref. 25-25-05).

(5) Remove polyurethane tape from all joints FS1763.5 to aft pressure bulkhead between left and right outboard dust angles (Ref. Fig. 404).

(6) Remove aisle floor panels between FS1763.5 and FS1820.0 and lavatory floor panels for access to hat sections.

(7) Solvent clean the threshold hat section and floor support structure.

B. Installation

R (1) Solvent clean hat section and floor support structure
R (Ref. Fig. 404).

(2) Apply fillet sealing compound to upper surface of floor support structure and to horizontal and vertical legs of hat section approximately 0.010 inch thick. Do not apply sealing compound to top of hat section.

NOTE: Where ensolite seals are installed, replace with silicone rubber.

(3) Install silicone seal strips while sealing compound is wet. Firmly press silicone strip edge against vertical leg. A continuous bead of sealing compound must be extruded at this silicone strip edge. If not present, remove strip and apply additional sealing compound.

(4) Install silicone rubber strips on remainder of panel supporting surfaces.

(5) Install each floor panel with two or three screws in panel for positioning.

NOTE: If new silicone seals are installed, puncture through to permit screw installation.

(6) Brush coat remainder of inserts with fillet sealing compound in a manner that sealing compound covers countersink and enters hole. Sealing compound must overlap onto floor panel surface a minimum of 1/4 inch.

(7) While sealing compound is still wet, install attaching screws.

(8) Remove positioning screws, apply sealing compound to inserts as described above and reinstall screws.

CAUTION: DO NOT RETORQUE SCREWS SINCE SILICONE SEALS WILL TAKE SET.

(9) Tighten screws one time to 20 to 25 pound-inches torque.

(10) Lay nylon lacing tape at base of gap leaving ends of tape above floor panel level.

(11) Fill remainder of gap over lacing tape with Sealing Compound leaving ends of tape accessible above sealant level.

(12) Inject fillet sealing compound into all gaps between lavatory partitions and floor or structure.

(13) Solvent clean top of threshold hat section.

(14) Apply polyurethane tape 0.0085 x 2.75 wide to lavatory panels covering inserts and to vertical surfaces.

NOTE: *Exercise care to prevent air bubbles under polyester film.*

(15) Apply polyester film from FS1763.5 aft to threshold hat section leaving hat bare. Apply film to floor inside each lavatory.

R R (16) Reinstall floor covering and carpet as applicable (Ref. 25-25-05).

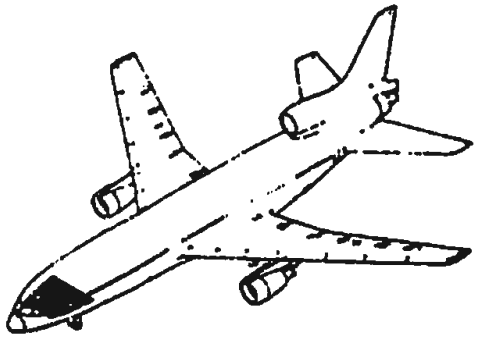
R R (17) Solvent clean top of threshold hat section (Ref. Fig. 404).

(18) Apply fillet sealing compound to floor area over hat section to receive threshold. Inject sealing compound under any loose floor cover edges in threshold area. Apply sealing compound generously to underside of threshold filling cavity.

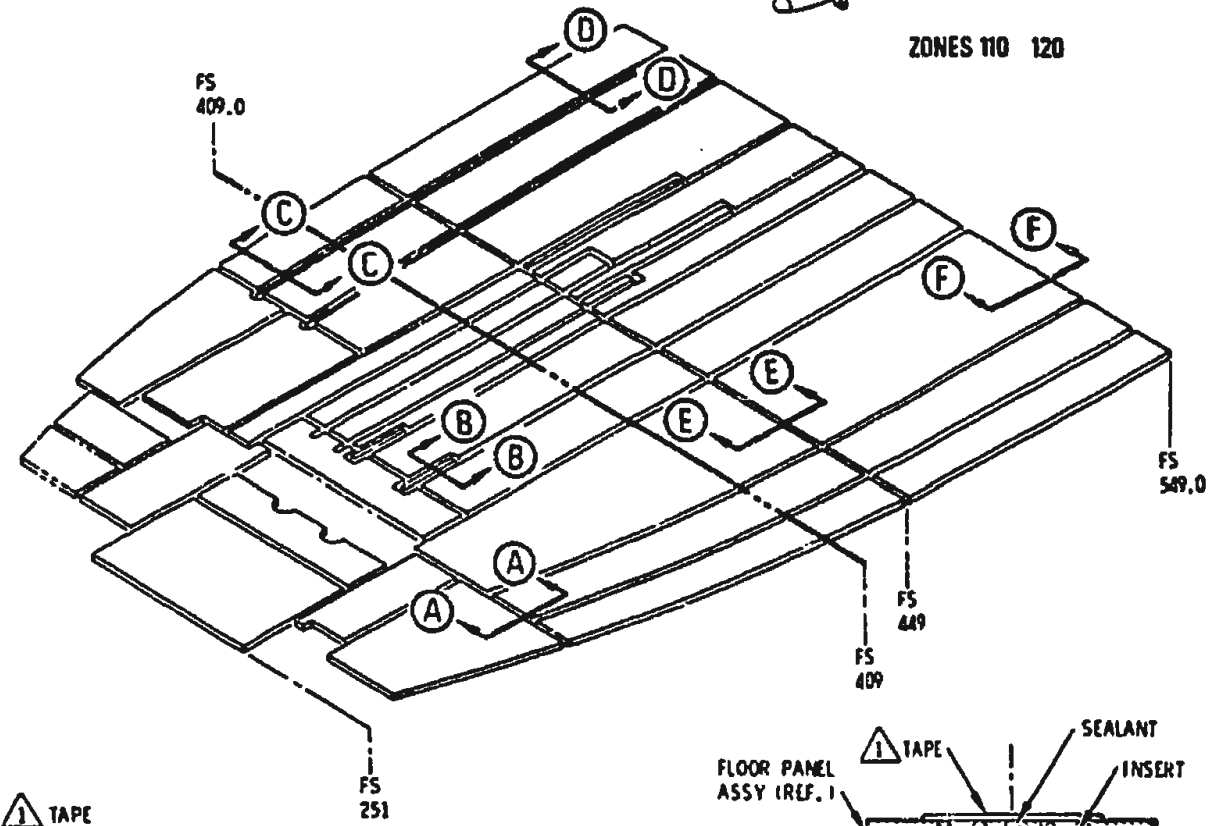
(19) Install threshold while sealing compound is wet. A continuous bead of sealing compound must be visible at all edges of threshold after installation. If not visible, remove threshold, and add additional sealing compound and reinstall. Install threshold screws wet with fillet sealing compound.

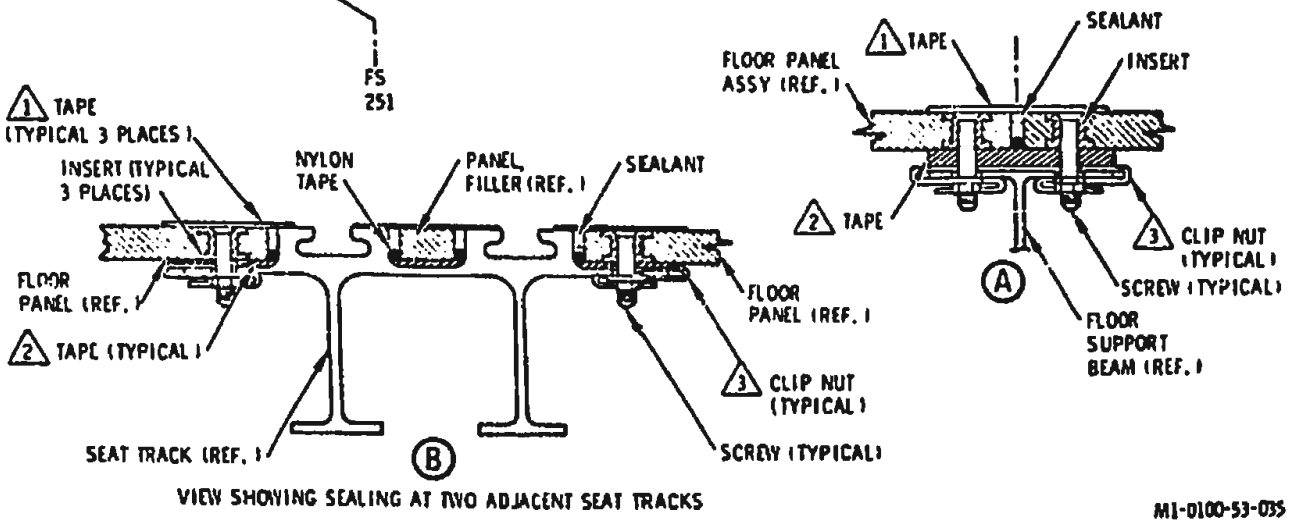
(20) Reinstall filler.

(21) Reinstall all items of equipment removed in Step 4A(1).



ZONES 110 120



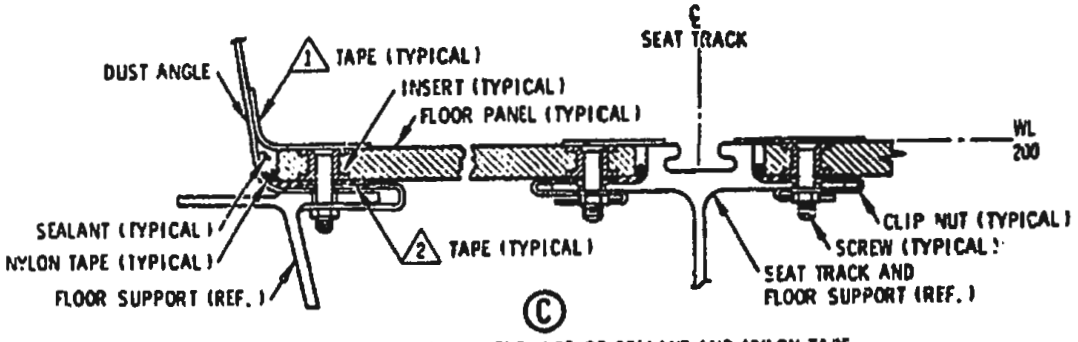


VIEW SHOWING SEALING AT TWO ADJACENT SEAT TRACKS

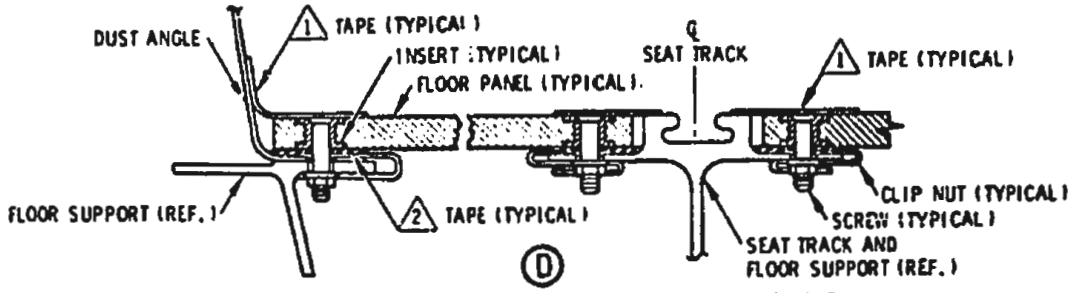
M1-0100-53-035

R Passenger Compartment Floor Panels - Removal and Installation
R Figure 402 (Sheet 1)

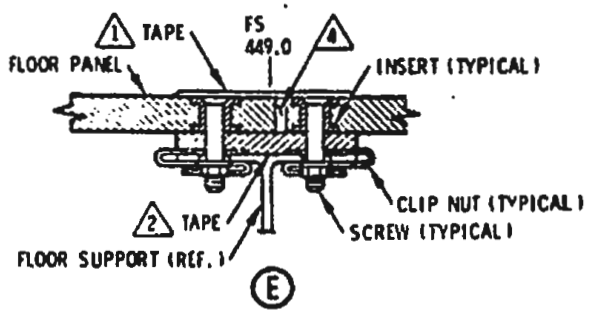
EFFECTIVITY: ALL

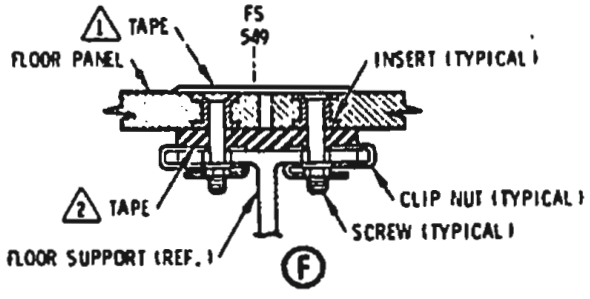


VIEW SHOWING ATTACHMENT, USE OF SEALANT AND NYLON TAPE IN TRACK FLANGE AND DUST ANGLE AREA



VIEW SAME AS C EXCEPT IN AREA NOT REQUIRING SEALANT AND NYLON TAPE



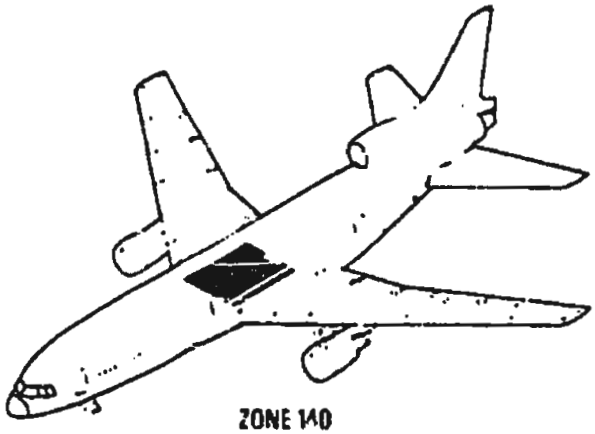


NOTE

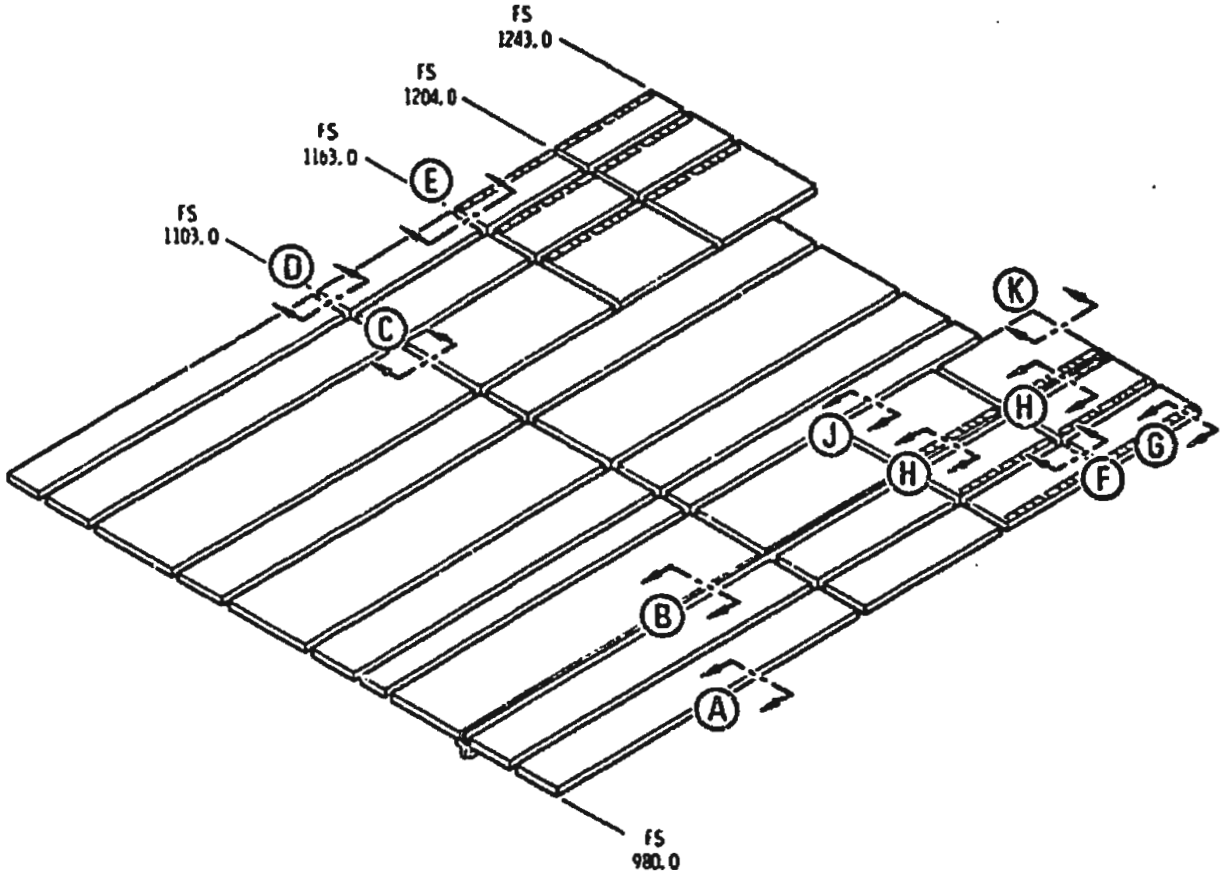
1. POLYURETHANE TAPE 0.0085 INCH THICK, WIDTH AS REQUIRED FOR EACH LOCATION. (THICKNESS OF TAPE EXAGGERATED FOR CLARITY)
2. ENSOLITE VINYL FOAM OR SILICONE SPONGE RUBBER, 1/16 TO 5/16 INCH THICK, 1 TO 2 INCHES WIDE
3. CLIP NUTS AND PLATE NUTS USED FOR FLOOR PANEL ATTACHMENT. CLIP NUTS PREFERRED WHERE EDGE DISTANCE AND STRUCTURE THICKNESS PERMIT USE. WHEN PLATE NUTS REQUIRE REPLACEMENT, USE CLIP NUTS WHEN CONDITIONS PERMIT
4. USE OF NYLON TAPE AND SEALANT OPTIONAL BETWEEN FS 409 AND FS 449; AND IN OTHER COMPARABLE AREAS IN PASSENGER COMPARTMENT

M1-0001-53-036

R Passenger Compartment Floor Panels - Removal and Installation
R Figure 402 (Sheet 2)



ZONE 140

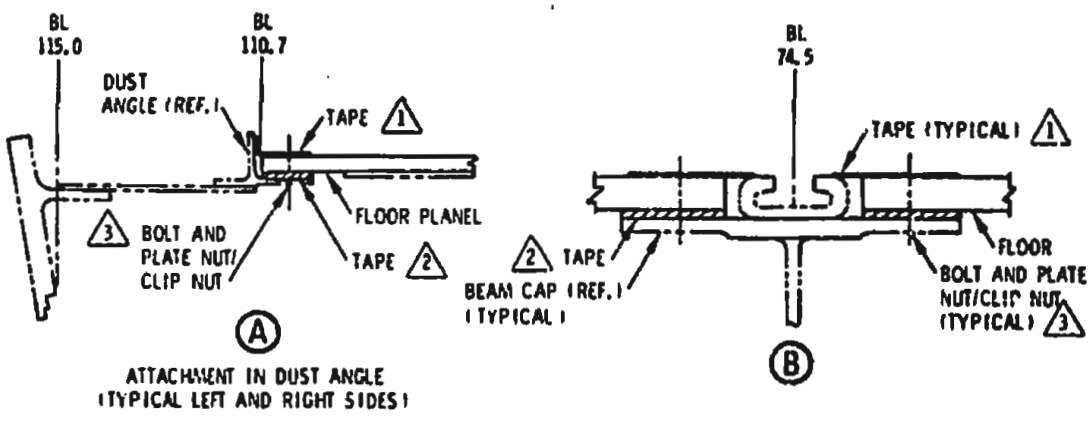


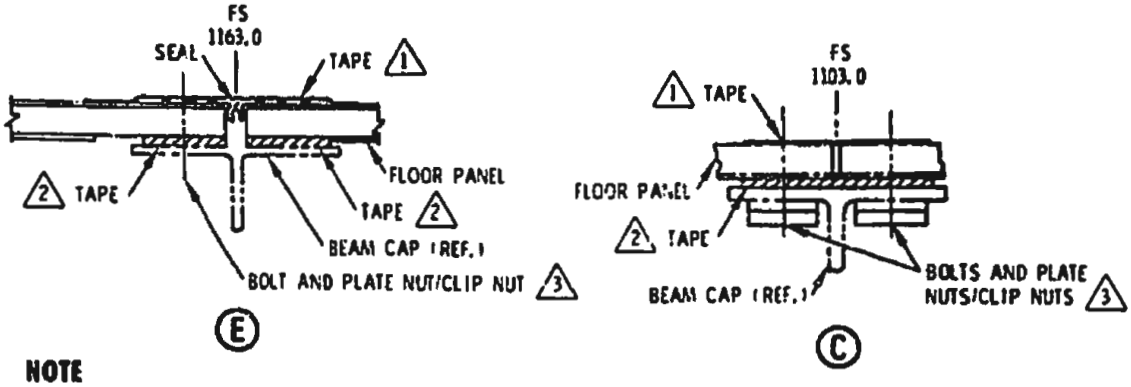
M1-0100-53-037

R Electrically Heated Floor Panels - Removal and Installation
R Figure 403 (Sheet 1)

EFFECTIVITY: ALL

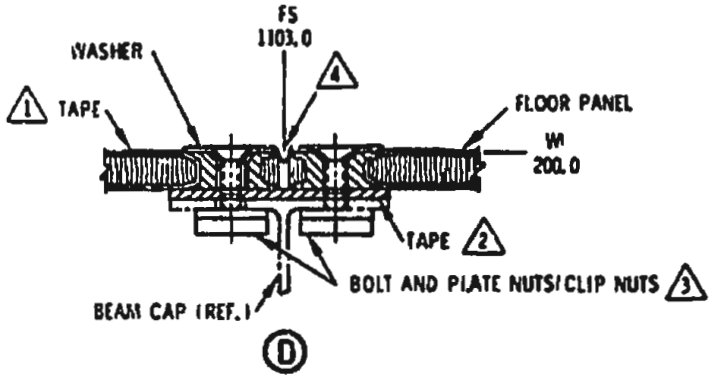
001B





NOTE

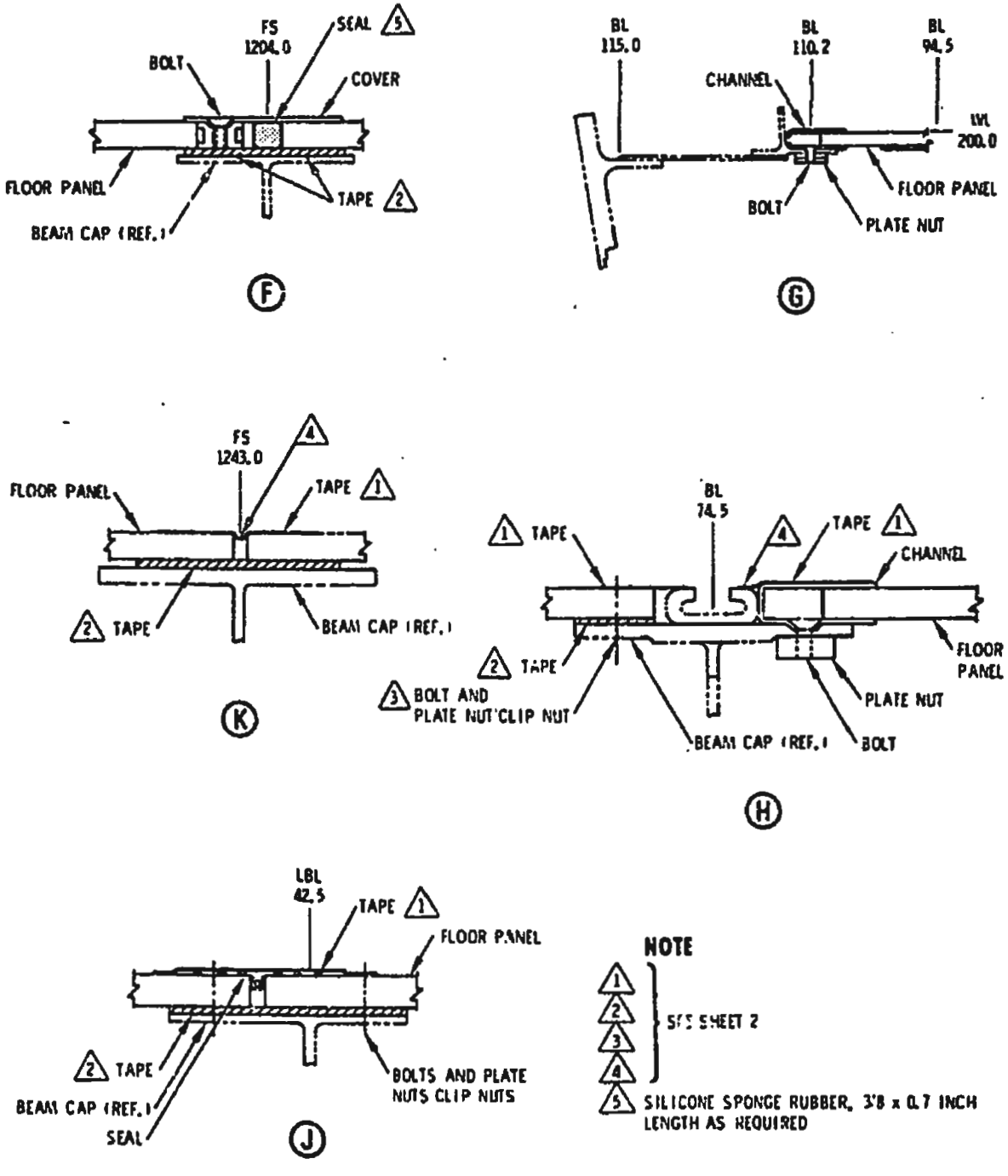
1. POLYURETHANE TAPE 0.0085 INCH THICK, WIDTH AS REQUIRED FOR EACH LOCATION. THICKNESS OF TAPE EXAGGERATED FOR CLARITY.
2. ENSOLITE VINYL FOAM OR SILICONE SPONGE RUBBER, 1/16 TO 5/16 INCH THICK, 1 TO 2 INCHES WIDE.
3. CLIP NUTS USED WHERE EDGE DISTANCE AND STRUCTURE THICKNESS PERMITS. PLATE NUTS USED AT OTHER LOCATIONS. ON AIRCRAFT USING PLATE NUTS, WHEN REPLACEMENT IS NECESSARY, USE CLIP NUTS WHEN EDGE DISTANCE AND STRUCTURE THICKNESS PERMIT.
4. NOTE THAT TAPE FORMS A LOOP INTO FLOOR PANEL GAP TO PROVIDE FOR FLOOR PANEL MOVEMENT
5. ALL ELECTRICALLY HEATED FLOOR PANELS HAVE HEATING ELEMENT STRIPS, LEAD WIRES AND CONNECTORS, AND INSULATION BLANKETS CEMENTED/ATTACHED TO UNDERSIDE OF PANEL. THESE ITEMS NOT SHOWN IN THIS FIGURE.



M1-0001-53-038

R Electrically Heated Floor Panels - Removal and Installation
R Figure 403 (Sheet 2)

EFFECTIVITY: ALL



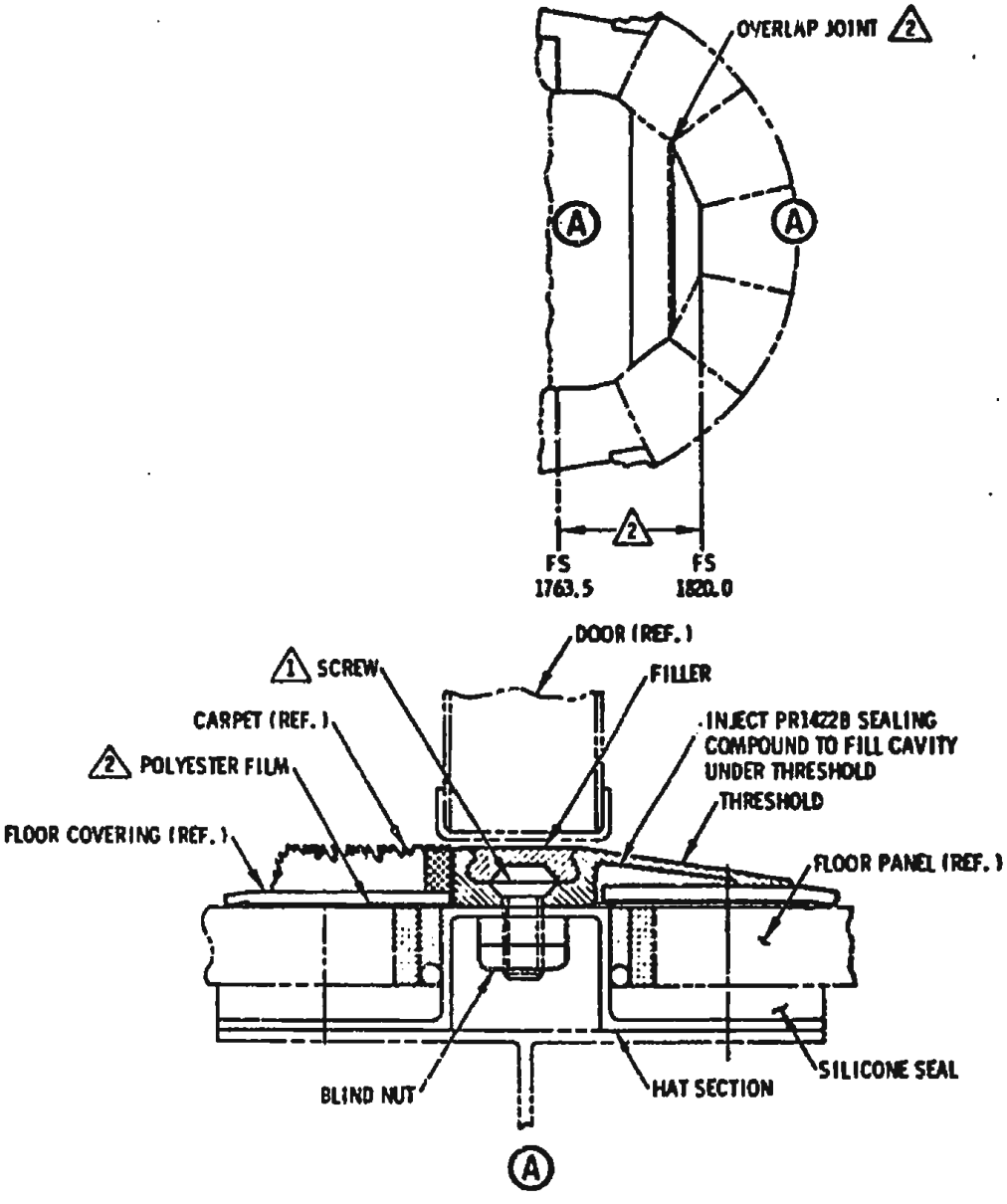
NOTE

1
2
3
4
} SEE SHEET 2

5 SILICONE SPONGE RUBBER, 3/8 x 0.7 INCH LENGTH AS REQUIRED

M1-0100-53-039

R Electrically Heated Floor Panels - Removal and Installation
R Figure 403 (Sheet 3)

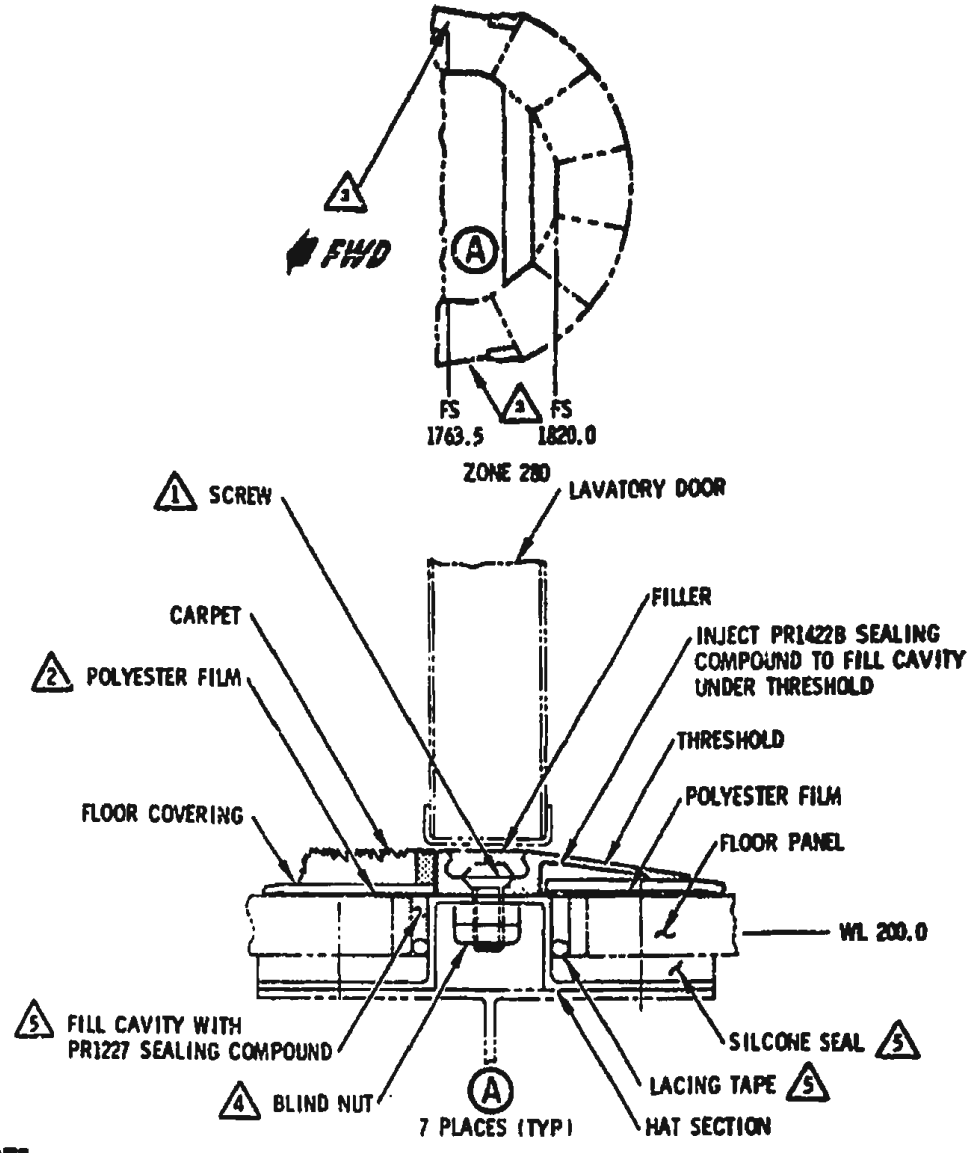


NOTE

1. INSTALL WET WITH PR1422B OR PR1422A2 SEALING COMPOUND
2. REMOVE POLYURETHANE TAPE FROM ALL JOINTS FS1763.5 TO FS1820.0 BETWEEN RIGHT AND LEFT OUTBOARD DUST ANGLES AND APPLY POLYESTER FILM TO FLOOR PANEL SURFACES. OVERLAP FILM SECTIONS 1.0 MINIMUM.

M1-1100-25-1632

R R Aft Lavatory Entrance Floor Corrosion Prevention
Figure 404



NOTE

1. INSTALL WET WITH PR1422B OR PR1422A2 SEALING COMPOUND.
2. REMOVE POLYURETHANE TAPE FROM ALL JOINTS BETWEEN RIGHT AND LEFT OUTBOARD DUST ANGLES AND APPLY POLYESTER FILM TO FLOOR PANEL SURFACES. OVERLAP FILM SECTIONS 1.0 MINIMUM.
3. DO NOT REMOVE THESE PANELS FOR RESEAL UNLESS CORROSION IS EVIDENT AT AT THRESHOLD HAT SECTION AT LAVATORY CORNER.
4. BN360-1032-1 BLIND NUTS ARE TO BE USED FOR IN-PLACE REWORK ONLY. IF IF HAT SECTION MUST BE REPLACED, USE MS21075L3 NUTS INSTALLED WITH MS20426AD3 RIVETS IN LIEU OF BLIND NUTS.
5. TYPICAL EACH SIDE OF HAT SECTION.

M1-0000-53-072

Aft Lavatory Entrance Floor Corrosion Prevention
Figure 404

CR

PASSENGER CABIN FLOOR PANEL - APPROVED REPAIRS

CR 1. Cabin Floor Panel Field Repair

CR A. General

CR (1) Cabin floors which feel spongy may be repaired by
CR adding a surface doubler.

CR B. Equipment and Materials

CR (1) .063/.072 aluminum

CR C. Repair

CR (1) Cover complete spongy area plus 12 inches forward and
CR aft of affected area with sheet aluminum doubler.

CR (2) Secure with double face tape. Pick up existing screw
CR pattern (forward and aft) through center of panel.

CR D. Floor panel doublers must be removed during major
CR maintenance visits of five days duration or greater when the
CR floor panel is exposed and seats removed.

GALLEY FLOOR PANELS - REMOVAL AND INSTALLATION

1. General

All galley floor panels are attached to support structure with
R screws. Removal and installation procedure for all panels is similar. Figure 401 shows the floor plan, including access panel, and the various sectional views indicate sealing requirements for typical areas.

2. Equipment and Materials

Sealing compound - PR 1227 (Products Research and Chemical Co.), or equivalent

R Tape (SJ-8562) - Polyurethane 0.0085 inch thick x 2 inches wide

3. Referenced Procedures

20-51-04 Environmental Sealing of Model L-1011 Airplane

4. Removal/Installation

A. Removal

(1) Remove food and beverage carts from galley as required.

(2) Remove floor cover/carpeting, including trim strips and molding as required to gain access to panel(s) to be removed. Identify and retain all screws for reuse at same location.

(3) Remove floor joint sealing tape, if applicable (Ref. Fig. 401).

(4) Remove joint sealant, using tool that will not damage floor panel edges.

(5) Remove attachment screws around panel to be removed. Retain screws for reuse.

(6) Remove panel(s).

B. Installation

NOTE: For information regarding cleaning of floor panels and application of joint sealant and tape, refer to 20-51-04.

(1) Remove sealant from floor panels with plastic scraper or equivalent. With clean cloth dampened with suitable cleaning solvent, clean panel edges and underside of panel which contacts vinyl foam or silicone sponge rubber strips. Remove solvent film with clean dry cloth.

R WARNING: ASSURE THAT CLEANING OPERATIONS ARE PERFORMED WITH PROPER VENTILATION.

(2) Check condition of vinyl foam or silicone sponge rubber strips on floor support structure.

NOTE: If replacement is necessary, use silicone sponge rubber.

(3) Check floor panel for delamination, core damage and general condition.

(4) Install floor panel in position.

(5) Install all screws, except those which retain floor covering trim or molding, and torque one time to 20 to 25 lb in.

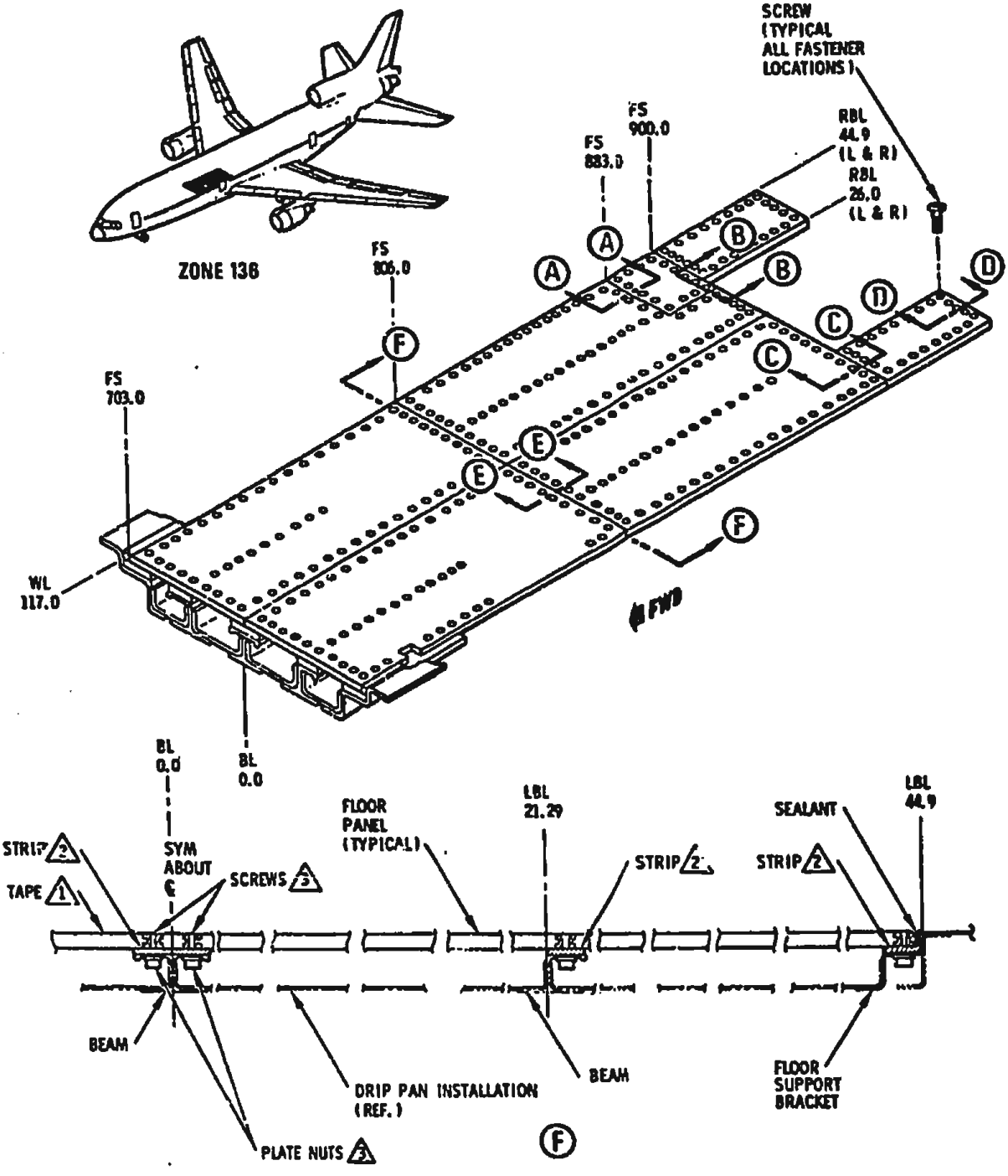
NOTE: Do not retorque screws as vinyl foam or silicone sponge rubber acquires a set on initial torque.

(6) Fill joint gaps with sealant flush to top surface of floor panel (Ref. Fig. 401).

(7) Apply polyurethane tape, if in applicable area (Ref. Fig. 401).

(8) Reinstall floor covering/carpeting, trims strips and molding removed in 4A(2).

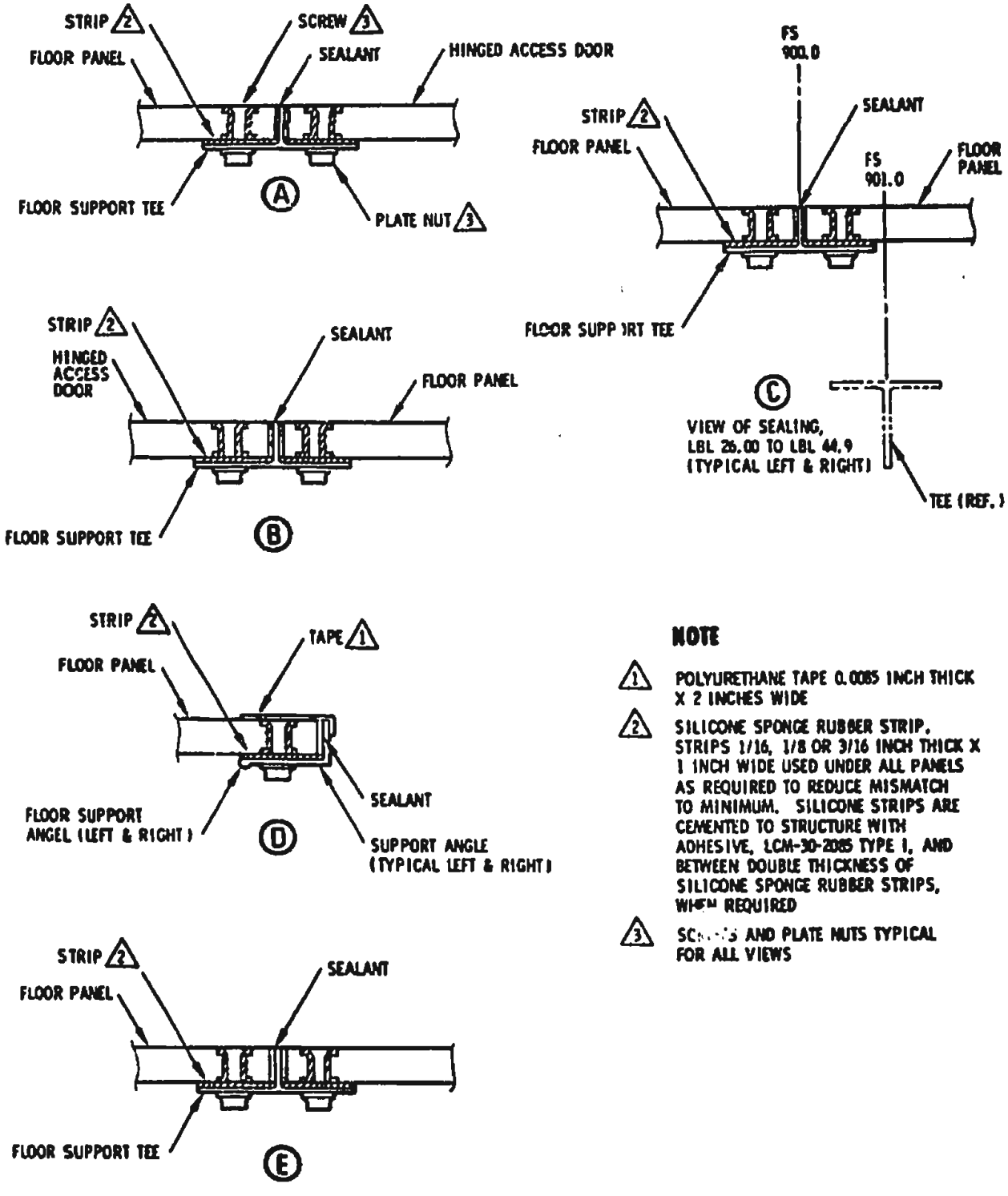
(9) Replace food and beverage carts at proper location as required.



M1-1600-53-046

R Galley Floor Panels - Removal and Installation
R Figure 401 (Sheet 1)

R EFFECTIVITY: ALL
R
0168



NOTE

1. POLYURETHANE TAPE 0.0085 INCH THICK X 2 INCHES WIDE
2. SILICONE SPONGE RUBBER STRIP, STRIPS 1/16, 1/8 OR 3/16 INCH THICK X 1 INCH WIDE USED UNDER ALL PANELS AS REQUIRED TO REDUCE MISMATCH TO MINIMUM. SILICONE STRIPS ARE CEMENTED TO STRUCTURE WITH ADHESIVE, LCM-30-2085 TYPE I, AND BETWEEN DOUBLE THICKNESS OF SILICONE SPONGE RUBBER STRIPS, WHEN REQUIRED
3. SCREWS AND PLATE NUTS TYPICAL FOR ALL VIEWS

M1-0001-53-047

R Galley Floor Panels - Removal and Installation
R Figure 401 (Sheet 2)

EFFECTIVITY: ALL

CR

MAIN DECK SUBSTRUCTURE CORROSION TREATMENT

CR 1. Main Deck Substructure Corrosion Treatment

CR A. General

CR (1) Procedure for treating floor substructure under
CR galleys, lavatories and adjacent to doorways. This
CR procedure supplements existing LAC procedures and
CR should be adhered to when installing panels under Lavs,
CR Galleys.

CR 2. Equipment and Materials

CR A. Corrosion preventative compound, MIL-C-16173D, Grade I
CR (50-0125).

CR B. Zinc Chromate Paste, Graybar Electric Company, RL3700
CR (50-0170).

CR C. Corrosion preventative compound, MIL-C-11796, Class II
CR (50-0674).

CR D. Plastic track filler, BAC1522-337-421 (52-0465).

CR E. Safety solvent (90% Methylene-Chloride, 10% Isopropyl
CR Alcohol) (50-1015).

CR F. Permacel P306 Adhesive Backed Tape (47-4159).

CR G. PR1422A 1/2 (50-0633 or 69-3587 qts).

CR H. Foam tape, .125 thick, 1.0 inch wide MIL-P-15280 (47-4130).

CR 3. Procedure

CR A. All tape shall be removed from floor beams and substructure.

CR B. In areas 18.0 inches forward and aft of galleys, modesty
CR bulkheads, and doorways, treat as follows:

CR (1) Apply epoxy primer to all unpainted aluminum surfaces
of replacement track.

CR (2) All intercostals (hat sections) which are to be
CR replaced shall be cleaned with MEK, primed with epoxy
CR primer and a final coat of white polyurethane applied.

CR (3) All other seat tracks and intercostals which have minor corrosion shall have corrosion removed within the limits of the SRM. Prime and coat all bare surfaces with 50-0125 per (5), (8), and (9).

CR (4) Before clip nuts are installed, apply a brush coat of MIL-C-16173C, Grade I, corrosion preventative compound (50-0125) to areas shown in views A and B (Ref. Fig. 401).

CR CAUTION: DO NOT ALLOW COMPOUND TO DROP ON WIRING, CABLES OR OXYGEN LINES OR OXYGEN TANKS.

CR (5) Application of 50-0125 is not required on floor beams except where clip nuts are installed or where corrosion has been removed.

CR (a) Install clip nuts and apply 50-0125 compound on upper and lower side of clip nuts. Use acid brush on lower side.

CR (6) If tape is needed for shimming, use foam tape and apply to lower side of floor panels.

CR (7) Install floor panel after approved by Inspector. Apply a small amount of sealant (PR1422, or equiv) to screw shank and underside of washer.

CR (8) Just before mylar tape is installed, pour compound (50-0125) in center of track per view "C" (Ref. Fig. 401).

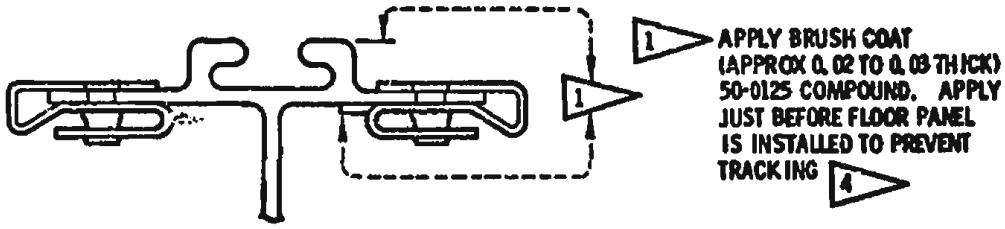
CR (9) Just before mylar tape is installed, brush on compound (50-0125) on top of hat section and gaps between floor panel and hat sections per view "B" (Ref. Fig. 401). Seal gaps between floor panel and hat sections with sealant (PR1422 or equiv) per View "B" (Ref. Fig. 401). Coat all exposed aluminum.

CR (10) Just before mylar tape is installed, snap in plastic track filler where required.

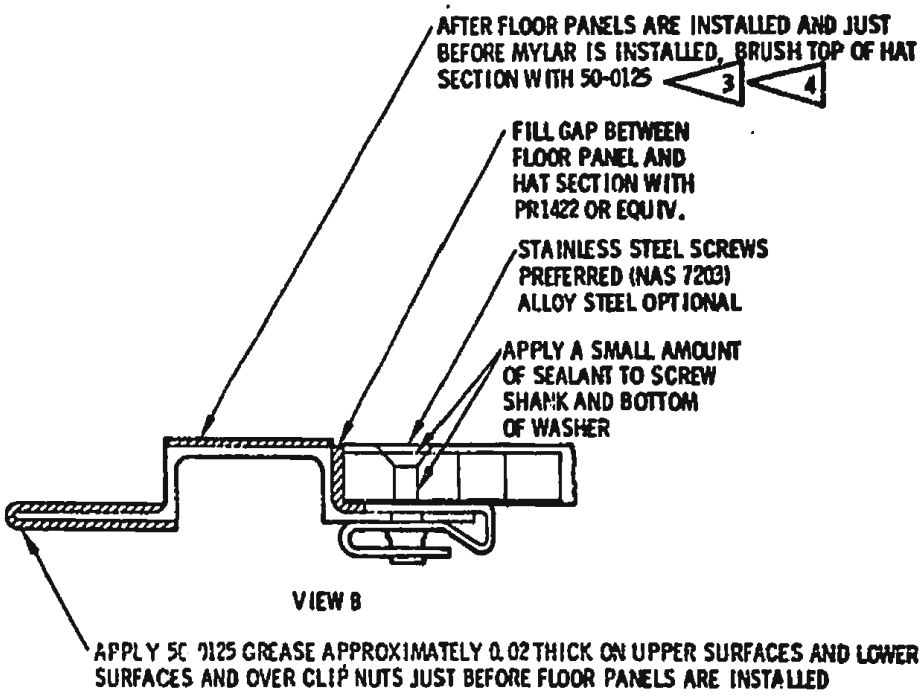
CR (11) Clean off floor panels with solvent and install Permacel P306 tape. Apply tape one foot each side of seat track center line.

CR (12) After all lavatory, galley service centers, etc. are installed, fill all tie-down cavities with MIL-C-11796B, Class II, Grade II, Grease (50-0674) and install tie downs.

CR (13) After door sills, lavatory pans, vinyl floor coverings,
CR etc. are installed, standard sealing procedures shall
CR be followed.


1
APPLY BRUSH COAT (APPROX 0.02 TO 0.03 THICK) 50-0125 COMPOUND. APPLY JUST BEFORE FLOOR PANEL IS INSTALLED TO PREVENT TRACKING
4
1

VIEW A


AFTER FLOOR PANELS ARE INSTALLED AND JUST BEFORE MYLAR IS INSTALLED, BRUSH TOP OF HAT SECTION WITH 50-0125
3
4
FILL GAP BETWEEN FLOOR PANEL AND HAT SECTION WITH PR1422 OR EQUIV.
STAINLESS STEEL SCREWS PREFERRED (NAS 7203) ALLOY STEEL OPTIONAL
APPLY A SMALL AMOUNT OF SEALANT TO SCREW SHANK AND BOTTOM OF WASHER
APPLY 50-0125 GREASE APPROXIMATELY 0.02 THICK ON UPPER SURFACES AND LOWER SURFACES AND OVER CLIP NUTS JUST BEFORE FLOOR PANELS ARE INSTALLED

VIEW B

3 MYLAR SPLICE MUST BE AT LEAST 12.0 INCHES FORWARD OR AFT OF HAT SECTIONS.

4 MAKE CERTAIN ALL ALUMINUM IN CONTACT WITH FLOOR PANELS IS PRIMED AND COATED WITH 50-0125.

M1-0000-53-109

CR
CR

Floor Corrosion Treatment
Figure 401 (Sheet 1)

R EFFECTIVITY: ALL
R
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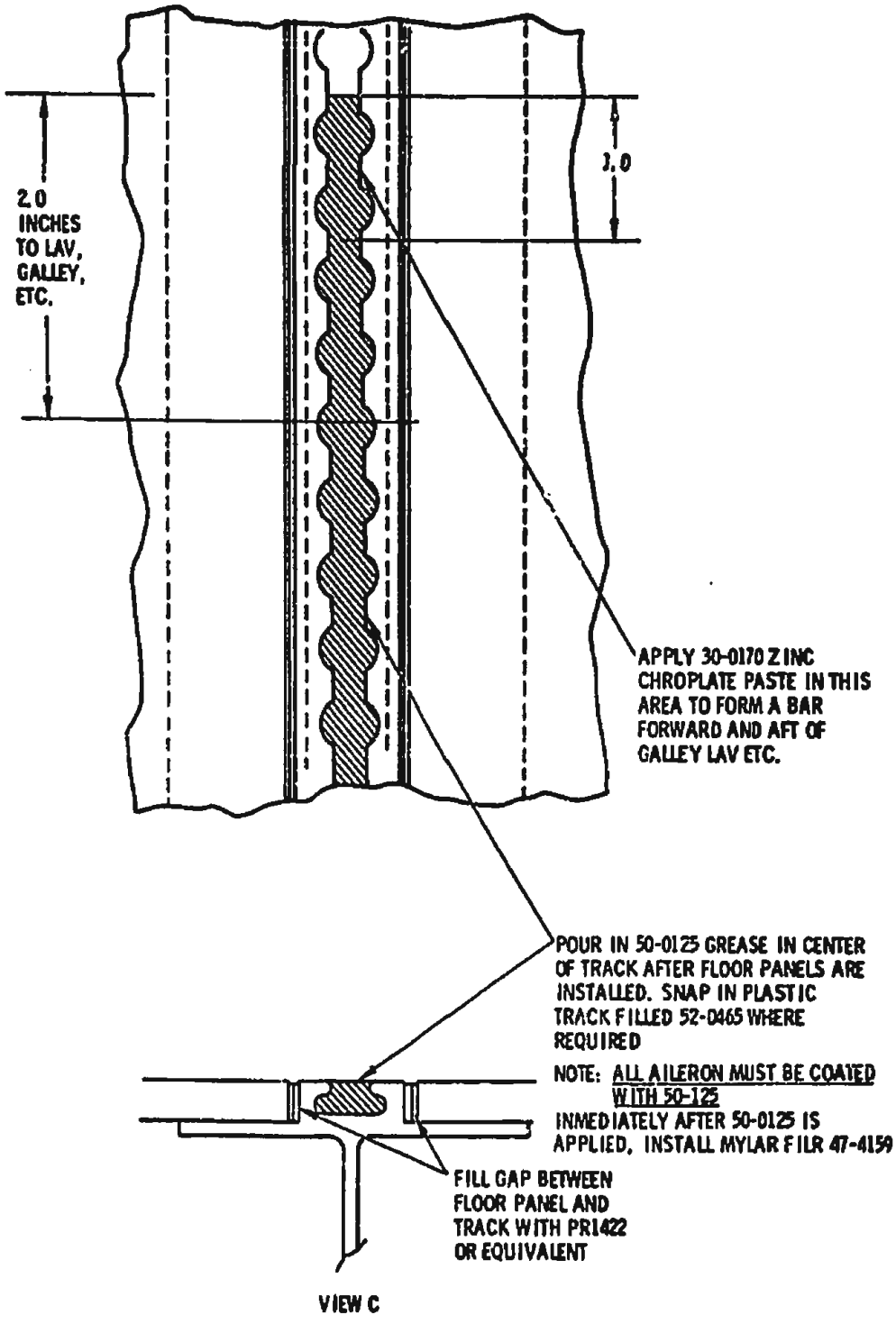

2.0
INCHES
TO LAV,
GALLEY,
ETC.
2.0
APPLY 30-0170 ZINC CHROPLATE PASTE IN THIS AREA TO FORM A BAR FORWARD AND AFT OF GALLEY LAV ETC.
POUR IN 50-0125 GREASE IN CENTER OF TRACK AFTER FLOOR PANELS ARE INSTALLED. SNAP IN PLASTIC TRACK FILLED 52-0465 WHERE REQUIRED
NOTE: ALL AILERON MUST BE COATED WITH 50-125
INMEDIATELY AFTER 50-0125 IS APPLIED, INSTALL MYLAR FILR 47-4159
FILL GAP BETWEEN FLOOR PANEL AND TRACK WITH PR1422 OR EQUIVALENT
VIEW C

M1-0000-53-110

CR
CR

Floor Corrosion Treatment
Figure 401 (Sheet 2)

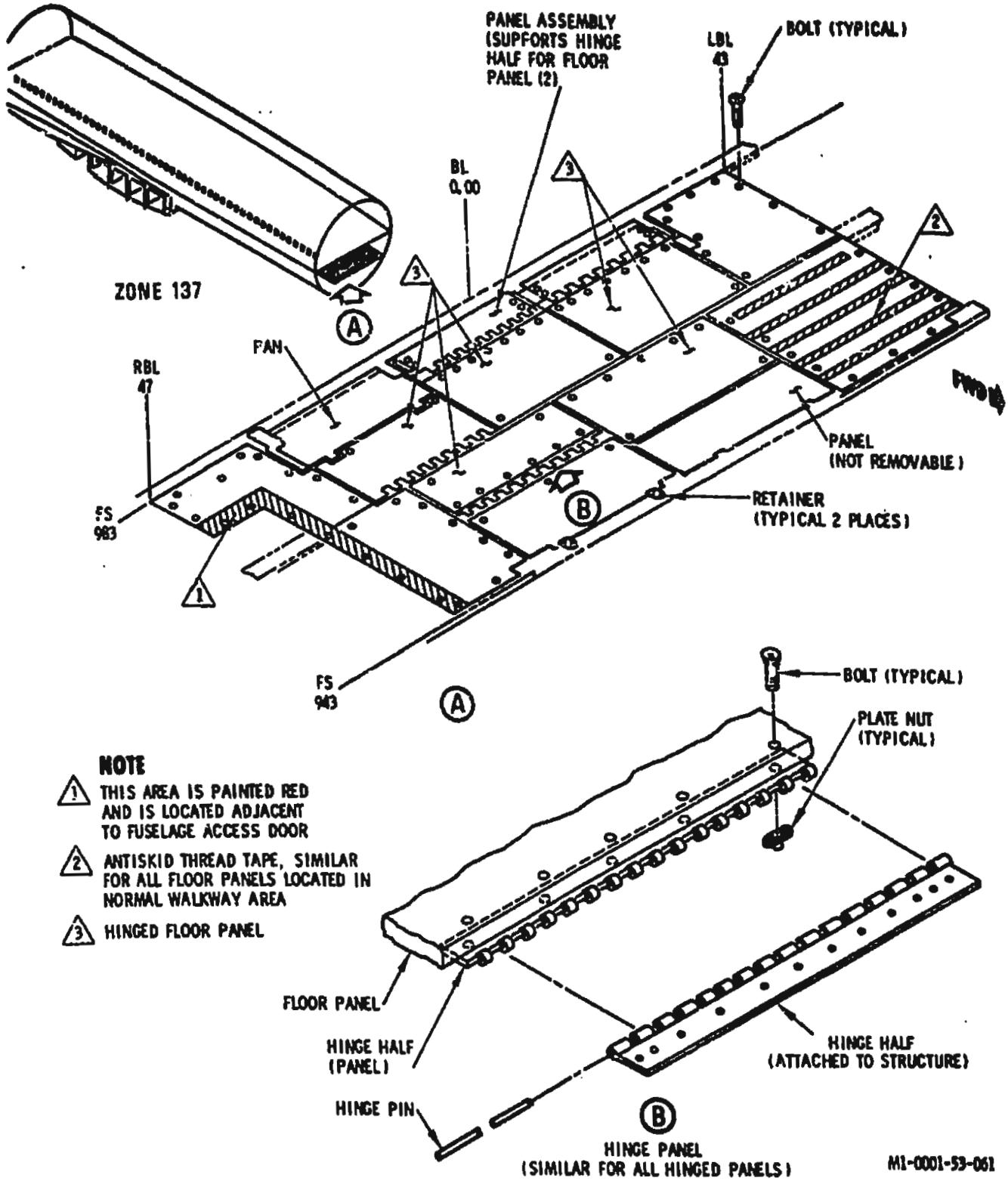
R EFFECTIVITY: ALL
R
001B

MID ELECTRICAL SERVICE CENTER FLOOR PANELS
DESCRIPTION AND OPERATION

1. General

The floor panels in the mid electrical service center are of sandwich construction consisting of metallic skins bonded to a fibrous nylon honeycomb core. The floor panels are removable, vary in size and shape and are attached to floor support structure with screws. Insulation blankets are attached to the underside of the floor panels.

The floor panels extend from FS 943 to FS 983 and from LBL 43 to RBL 47. Some floor panels are hinged for quick access to system components while other panels are fastened entirely with screws. The various floor panels have a series of one-inch wide strips of nonskid, adhesive-backed tread tape as a protection against slipping. Figure 1 depicts a typical floor panel arrangement for the mid electrical service center.



NOTE

1. THIS AREA IS PAINTED RED AND IS LOCATED ADJACENT TO FUSELAGE ACCESS DOOR
2. ANTISKID THREAD TAPE, SIMILAR FOR ALL FLOOR PANELS LOCATED IN NORMAL WALKWAY AREA
3. HINGED FLOOR PANEL

R48 MID ELECTRICAL SERVICE CENTER FLOOR PANELS - D/O, FIGURE 1

R R **Mid Electrical Service Center Floor Panels**
Figure 1

EFFECTIVITY: ALL

001B

R MID ELECTRICAL SERVICE CENTER FLOOR PANELS
R REMOVAL AND INSTALLATION

R 1. General

R There are three variations of floor panels in the mid electrical
R service center: Nonhinged panels, attached entirely to support
R structure with bolts.

R Hinged panels, retained in closed position by two bolts on side
R opposite from hinge.

R Panels which are retained on one side by two retainers and on
R opposite side by three bolts.

R All floor panels of a given type are removed and installed in
R the same manner.

R 2. Referenced Procedures

R	6-50-00	Interior Panels, Zone 137, Mid Electrical Service Center
R	20-51-12	Fabrication and Installation of Fiberglass Batt Insulation in L-1011 - PB 71-471B

R 3. Removal/Installation

R NOTE: Access to the mid electrical service center is gained
R through fairing door 192K (right side) and the S-2
R pressure door, 137AZ. Alternate access is provided
R through door 132FR, located at galley aft bulkhead.

R If several floor panels are to be removed, identify each
R panel as an aid in determining proper location at time of
R reinstallation.

R Figure 401 is applicable for each of the following
R procedures.

R A. Removal

R (1) Nonhinged Floor Panels

R (a) Determine panel(s) to be removed.

R (b) Remove all attachment bolts. Save bolts for
R reuse.

(c) Lift one edge of panel enough to obtain grasp and remove panel from cavity.

(2) Hinged Floor Panels

(a) Determine panel(s) to be removed.

(b) Remove two bolts located on side opposite hinge.

NOTE: On floor panels with pressure relief features, bolts are replaced with quick disconnect stud latches which need only be pried up to release floor panels.

The panel can now be moved to the open position. If removal of the panel from hinge is required, proceed to Step (c).

R (c) Remove bolts which attach panel to hinge. Retain bolts for reuse.

NOTE: For the hinged panels located at BL 0.00 and the adjoining panel that extends to approximately LBL 32, and between FS 963 and FS 983, it is optional to remove the small aft panel to which the hinged panel attaches by removal of two attachment screw on each side of each panel. This will permit both panels which comprise the hinged panel assembly to be removed as a unit.

(3) Floor Panels Secured By Retainers and Bolts

NOTE: This procedure applies to one floor panel located on the right side between BL 0.00 and RBL 25 and aft of FS 963.

(a) Remove three bolts at aft end of panel. Retain bolts for reuse.

R (b) Lift aft edge of panel. Pull panel aft sufficient
R for forward edge to clear two retainers and remove
R panel.

B. Installation

NOTE: Prior to installation, check condition of all removed floor panels, hinges, tread tape, insulation blankets, bolts, etc. For information on insulation, refer to 20-51-12.

(1) Nonhinged Floor Panels

(a) Install floor panel at proper location.

(b) Align panel insert holes with plate nuts.

(c) Install and tighten bolts, moving alternately from side to side.

(2) Hinged Floor Panels

(a) Place floor panel in position on hinge.

(b) Align panel insert holes with plate nuts on hinge.

(c) Install and tighten bolts.

(d) If optional procedure was followed as outlined in Step 3A(2)(C), place hinged panel assembly in position and install two screws at each side of small aft panel.

(e) Install two bolts which secure hinged panel.

NOTE: On floor panels with pressure relief features, bolts are replaced with quick disconnect stud latches which need only be pressed into position to secure floor panels.

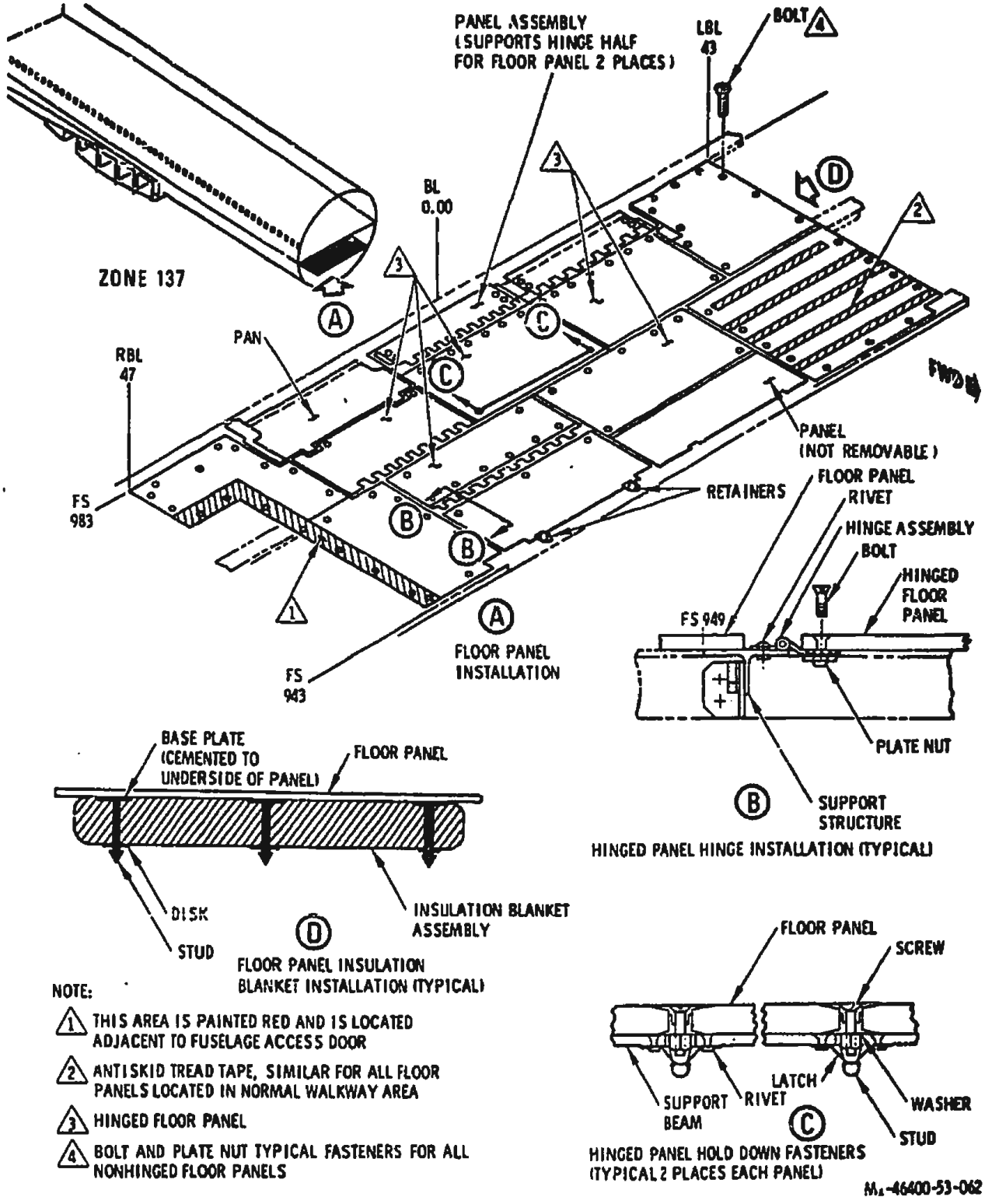
(3) Floor Panels Secured by Retainers and Bolts

(a) Place floor panel in position by inserting forward edge underneath two retainers.

(b) Align panel insert holes with plate nuts.

(c) Install and tighten bolts.

(d) Close access doors 192K and 137AZ or 132FR, as applicable.



NOTE:

1. THIS AREA IS PAINTED RED AND IS LOCATED ADJACENT TO FUSELAGE ACCESS DOOR
2. ANTISKID TREAD TAPE, SIMILAR FOR ALL FLOOR PANELS LOCATED IN NORMAL WALKWAY AREA
3. HINGED FLOOR PANEL
4. BOLT AND PLATE NUT TYPICAL FASTENERS FOR ALL NONHINGED FLOOR PANELS

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R Mid Electrical Service Center Floor Panels
R Removal and Installation
R Figure 401

R EFFECTIVITY: ALL
R
001B

CARGO COMPARTMENT FLOOR PANELS - DESCRIPTION AND OPERATION

1. General

The floor panels for the forward, center and aft cargo compartments are of sandwich construction consisting of metallic skins bonded to a center core. The floor panels vary in size and are removable; some have access doors or panels for quick access to specific systems accessory components. The various floor panels are attached to floor support structure by screws. The floor panels rest on adhesive foam tape which is attached to
R floor support structure. Floor panels are not interchangeable
R from one aircraft to another.

The forward cargo compartment floor panels extend from FS 449 to FS 703. The center cargo compartment floor panels extend from FS 1371 to FS 1625. The aft cargo compartment floor panels extend from FS 1625 to FS 1792.

The forward and center cargo compartments have the same dimensions and the floor panels, while different in quantity, are basically similar. These compartments have mechanized cargo handling systems. This equipment is mounted on top of the floor panels and is attached to floor support structure. The aft cargo compartment is used for bulk cargo only. Cargo restraint nets and tiedown fittings are used to restrain the cargo.

CARGO COMPARTMENT FLOOR PANELS - REMOVAL AND INSTALLATION

1. General

The basic removal and installation procedure is similar for all floor panels, though the size, shape and number of panels may vary.

The forward and center cargo compartments have mechanized cargo handling equipment installed on top of floor panels. This will necessitate the removal of all or some of the cargo handling system components to gain access for removal and installation of the floor panels. Therefore, this procedure will reference the appropriate section of Chapter 25 for removal/installation procedures for the various components of the cargo handling system. Figure 401 depicts the forward cargo compartment; however, the views and instructions are basically applicable for all cargo compartments.

The aft cargo compartment is for bulk cargo and is manually loaded and unloaded. Therefore, the floor panels are readily accessible.

2. Equipment and Materials

Sealing compound PR 1227 (Products Research Corp.) or equivalent

Rubber Silicone Sponge Medium Class Material Spec C-23-924 Medium or equivalent, Kirkhill Rubber Co. or Hercules Inc.

Corrosion Preventative Compound MIL-C-16173

Polyester Film Protex 223-5, Mask-off Co.

R Trichloroethane-1,1,1, (MIL-T-81533), or equivalent

3. Referenced Procedures

20-51-04 Environmental Sealing of Model L-1011 Airplane

25-52-00 Cargo Handling and Stowage Systems

4. Removal/Installation

A. Removal

(1) For forward and center cargo compartments:

(a) Remove all items of cargo handling equipment, as necessary, to gain access to floor panel(s) to be removed. Refer to 25-52-00 for removal and installation procedures for applicable items of equipment.

(2) Remove sealant from joint gaps of all floor panels to be removed.

(3) Remove floor panel attachment bolts. Retain bolts for reuse.

(4) Remove floor panel and stow as required. Identify floor panel location as required.

(5) Repeat above steps for additional floor panels to be removed.

B. Installation

NOTE: For information regarding cleaning of floor panels, removal of sealing compound residue and wet installation of bolts, refer to 20-51-04.

(1) Check condition of adhesive foam tape on support structure. Repair or replace as required.

NOTE: Adhesive foam tape which is replaced will be of same thickness and width as original tape.

(2) Check floor panel(s) for delamination, core damage and general condition.

(3) Clean upper surface of floor support structure with Trichlorethane, or equivalent safety solvent.

(4) Apply approximately 10 MILS thick coat of sealing compound to cleaned support structure.

(5) Install silicone sponge on upper surface of support structure while the sealing compound is wet.

R (6) Apply approximately 10 Mils thick coat of sealing
R compound to floor panels.

R (7) Install Titanium floor panels.

NOTE: Titanium fasteners are to be wet installed with sealing compound.

R (8) Apply approximately 3 MILS thick coat of corrosion preventative compound to interior of tracks. Allow minimum of 4 hours to dry.

NOTE: On aft cargo floor, apply corrosion preventative compound between FS 1625 and FS 1673.

R (9) Apply polyester film 5 MILS thick over floor surface. Trim along edges to fit, cutout for drain cover and tie down access.

NOTE: On aft cargo floor, apply polyester film starting at FS 1625 and aft to FS 1673 between RBL53 and LBL53.

R (10) Apply approximately 10 MILS thick coat of sealing compound to overlap polyester film edges 1 inch minimum on both film and adjacent structure.

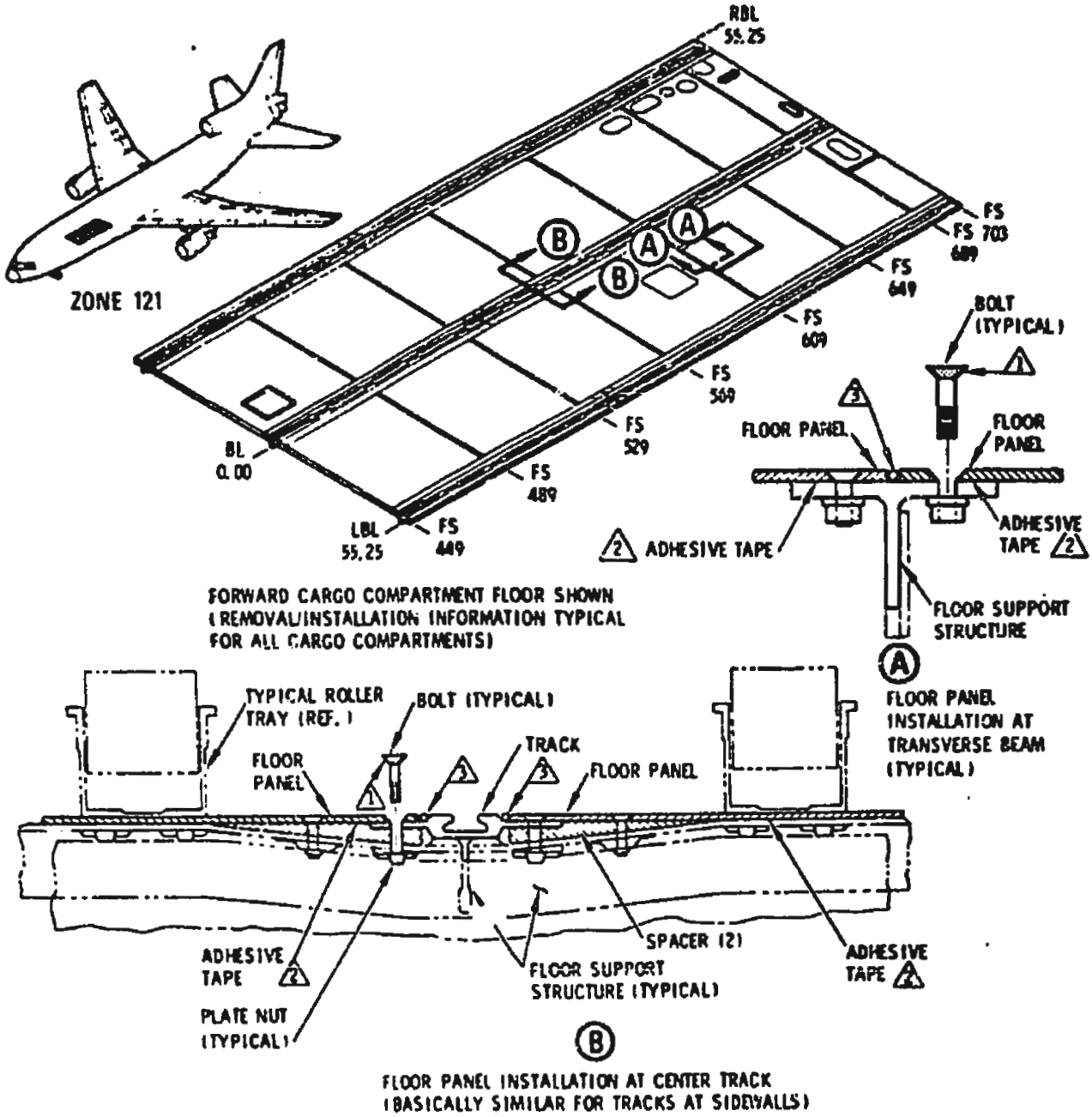
R (11) Apply 5 MILS thick polyester film with masking paper.

R (12) Apply a filler or brush coat of sealing compound approximately 0.025 inch over the edge of adhesive bonded joints.

NOTE: Sealing compound should completely cover and extend 0.060 to 0.125 inch beyond adhesive squeeze-out after skins have been attached to stringers, longerons and ribs.

R (13) For forward and center cargo compartments:

(a) Reinstall items of cargo handling system equipment removed in Step 4A(1). LT-PS Refer to 25-52-00 for installation.



NOTE

1. BRUSH COAT ALL BOLT HEADS WITH SEALING COMPOUND. DO NOT SEAL THREADS
2. ADHESIVE TAPE ATTACHED TO SUPPORT STRUCTURE AT ALL LOCATIONS (ACROSS, FORE AND AFT) WHERE FLOOR ATTACHMENTS ARE REQUIRED
3. APPLY SEALING COMPOUND AT ALL FLOOR JOINT GAPS. THIS INCLUDES GAPS AT FORWARD AND AFT BULKHEADS AND AT SIDEWALL PANELS

M1-37702-53-054

R Cargo Compartment Floor Panels - Removal and Installation
R Figure 401

R EFFECTIVITY: ALL
R
001B

FUSELAGE SKINS - DESCRIPTION AND OPERATION

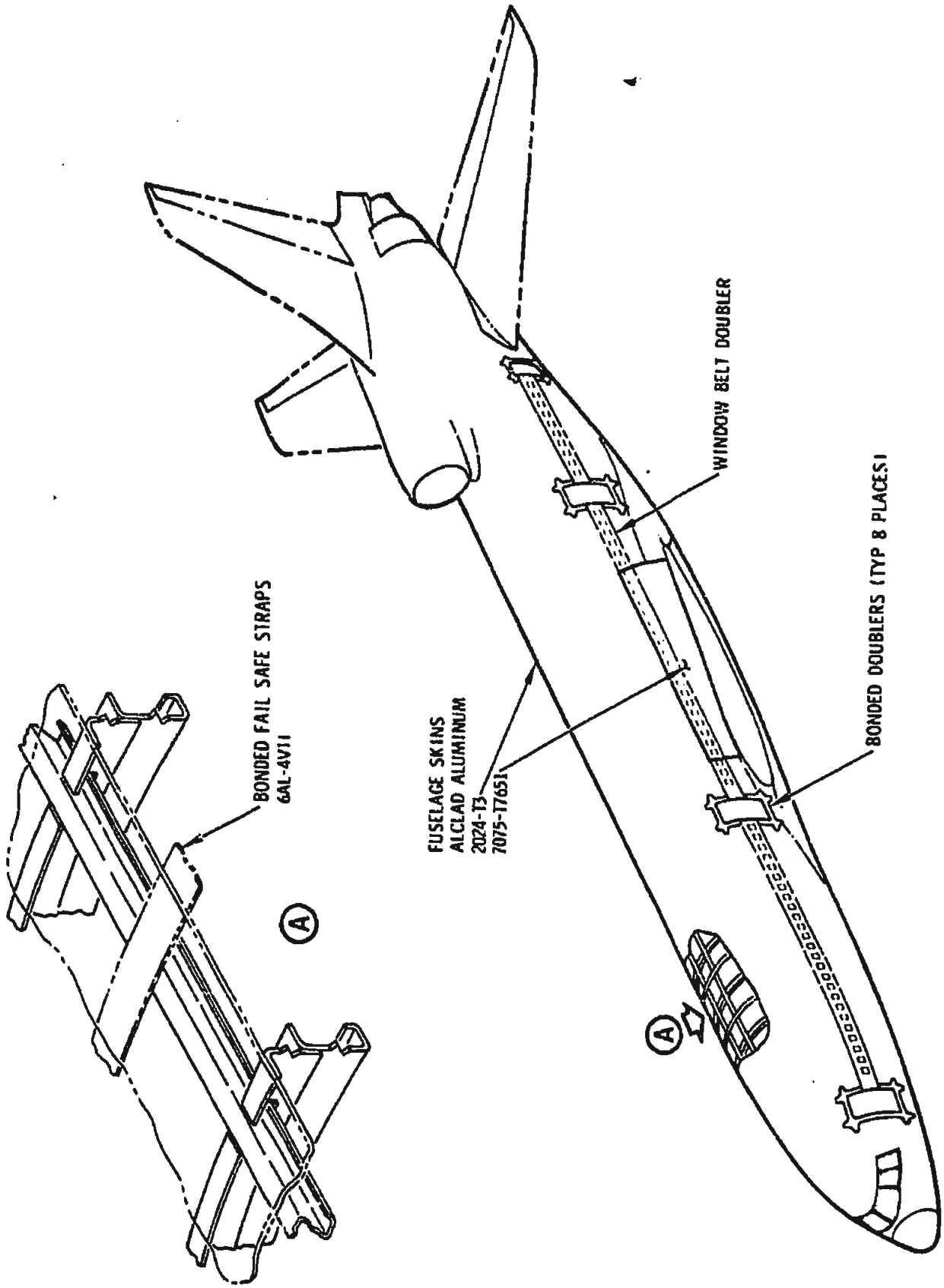
1. General

The fuselage exterior covering consists of aluminum and titanium skins. The fuselage skin panels (Ref. Fig. 1) forward of FS 1860 are bonded assemblies of clad aluminum outer skins, doublers, and titanium fail-safe straps. Clad 2024-T3 aluminum alloy is used on the pressurized areas of the fuselage, and aluminum alloy 7075-T76 is used in areas requiring high-strength material.

Fuselage skin panels in pressurized areas have a minimum thickness of 0.068 inch. Heavier gage skin and bonded doublers are used to meet design requirements. Chem-milled and machine-milled skins are also used.

A bonded skin panel belt is used in the stringerless side wall area between the longerons at WL 200 and 280.56. The skin belt consists of a 0.075-inch outer skin, a 0.015-inch doubler, and a window belt of 0.090-inch aluminum alloy. Heavier gage machined skin panels are used over the wing.

The fuselage afterbody skin panels are made of 7075 T-6 aluminum alloy, 6 AL-4V titanium, and 301 1/4 H corrosion resistant steel. The titanium and corrosion-resistant steel alloys are used to protect the structure from heat radiated by the engine and APU, and from engine and APU exhaust gases.



Fuselage Skins
Figure 1

APU ACCESS DOORS - DESCRIPTION AND OPERATION

1. General

Four auxiliary power unit (APU) doors provide access for maintenance, and removal/installation of the APU system (Ref. 49-00-01). The access doors are located on both sides of the APU platform, and are hinged to the outboard longerons of the APU compartment. Each of the four doors is hinged at three places with individual hinge pins. The door latches engage with the inner surface of stiffener angles on the APU platform (Ref. Fig. 1).

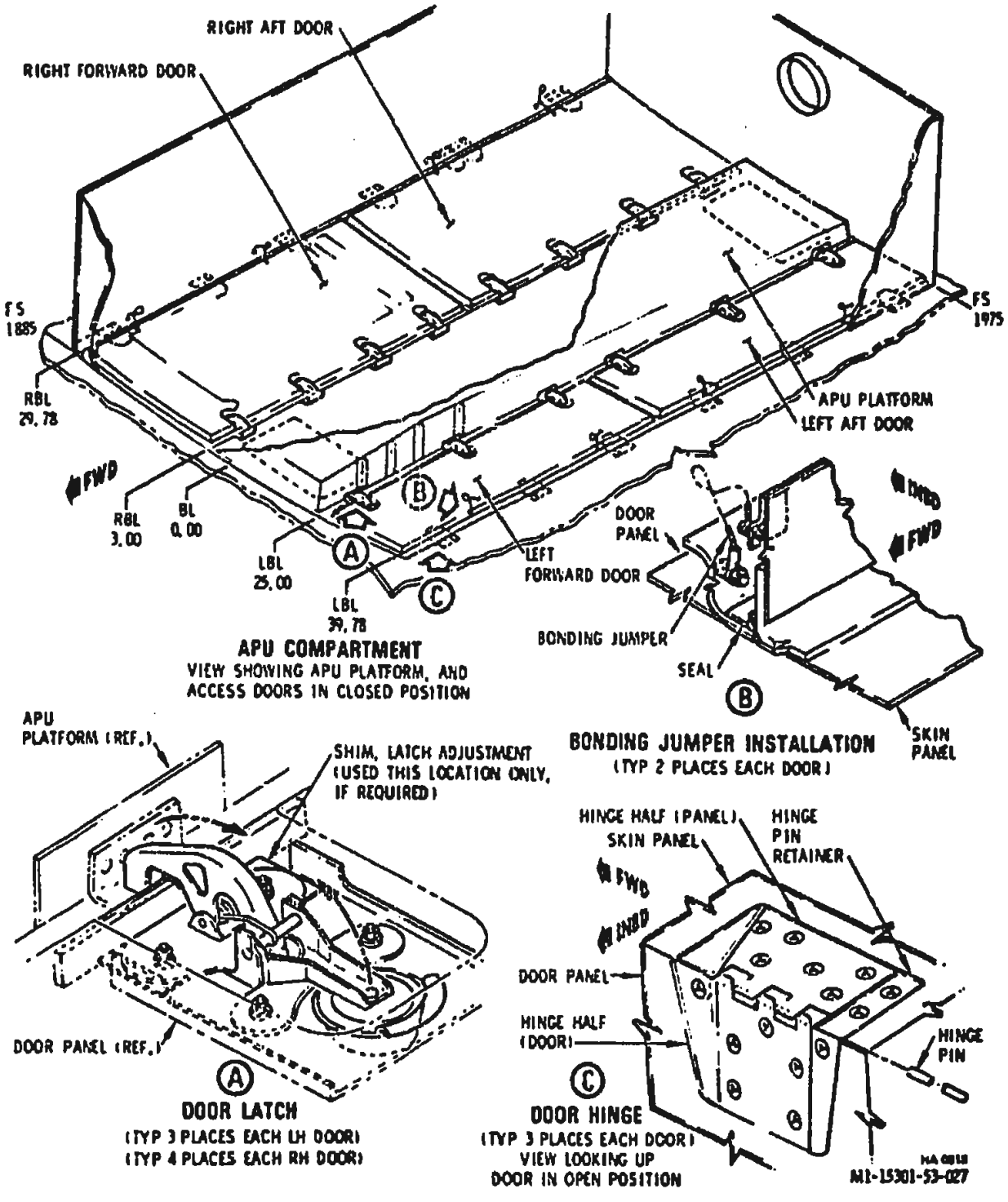
The APU access doors are located in zone 319 and are identified by the numbers 319AL, 319BR, 319CL, and 319DR.

The unstressed doors are made of titanium sheet. The forward right door incorporates spring-loaded blowout panels, which open to relieve pressure in case of accidental pressure buildup in the APU compartment.

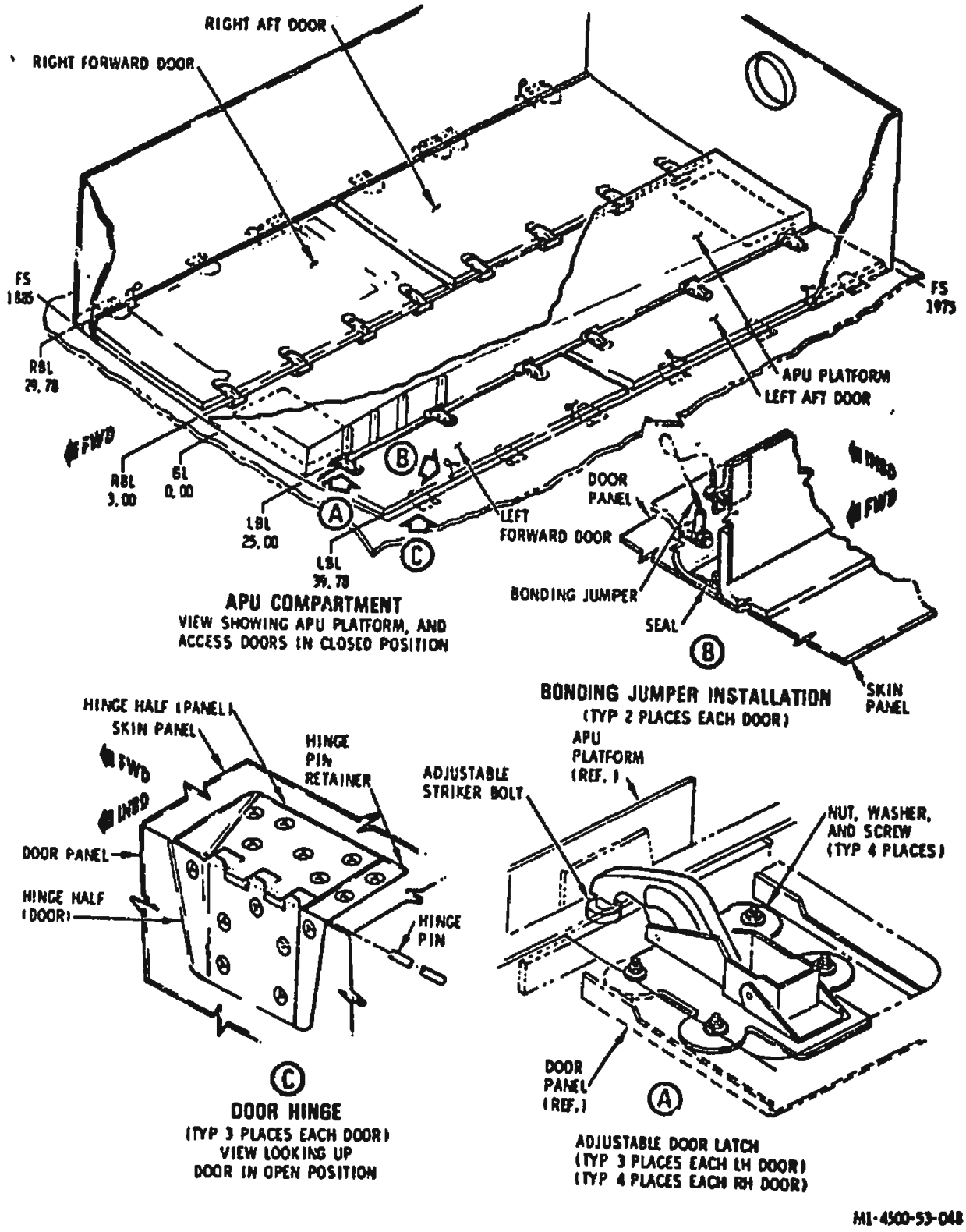
Each door can be retained in the wide open position by a cable assembly end knob inserted into a slotted keyhole in the aft fuselage skin. The cable assembly is permanently attached to an eyebolt located near the inboard center area of the door. The cable assembly is stowed by retaining clips.

The doors are readily removed or installed by removal or installation of the hinge pins and bonding jumpers. All door seals are attached with retainers and screws.

All doors are provided with quick-opening type latches. The doors on the right side have four latches each. The doors on the left side have three latches each.



APU Access Doors - Description and Operation
Figure 1



APU COMPARTMENT
VIEW SHOWING APU PLATFORM, AND ACCESS DOORS IN CLOSED POSITION

BONDING JUMPER INSTALLATION
(TYP 2 PLACES EACH DOOR)

DOOR HINGE
(TYP 3 PLACES EACH DOOR)
VIEW LOOKING UP
DOOR IN OPEN POSITION

ADJUSTABLE DOOR LATCH
(TYP 3 PLACES EACH LH DOOR)
(TYP 4 PLACES EACH RH DOOR)

MI-4500-53-048

APU Access Doors - Description and Operation
Figure 1

APU ACCESS DOORS - REMOVAL AND INSTALLATION

1. General

Removal and installation procedures are applicable for each of the four APU access doors (319AL, 319BR, 319CL, 319DR).

2. Equipment and Materials

Sealant - LCM 40-2180, Type I or Type II (Products Research Co. PR 7301 or 7401) or equivalent.

3. Referenced Procedures

	49-00-01	Auxiliary Power Unit (APU) - Removal and Installation
	20-24-04	Electric Bonding and Grounding Connections
R	20-51-04	Environmental Sealing
	51-80-00	Aerodynamic Smoothness (Structural Repair Manual)

4. Removal/Installation

A. Removal

(1) Open APU doors.

(2) Remove sealant and detach bonding jumpers from door (Ref. Fig. 401).

(3) Remove three hinge pin retainers located beside each outboard hinge half.

(4) Loosen attachment bolts of three outboard hinge halves. Do not remove bolts.

(5) While supporting door, remove three hinge pins and remove door.

B. Installation

(1) Check door latches for condition. If latch replacement is required, proceed as follows:

(a) Remove latch by removing four screws, washers and nuts.

NOTE: On aircraft 001-022, the APU doors have nonadjustable type latches, the door latch adjustment (if required) is provided by use of shims installed between the inboard side of the latch and the door skin (Ref. Fig. 401). If nonadjustable type latches are to be installed, retain shim(s) for reuse in same location.

NOTE: On aircraft 023-999, the APU doors have adjustable type latches, the door latch adjustment is provided by use of striker bolt which is threaded into the latching lever arm. Both nonadjustable and adjustable type latches are physically and functionally interchangeable.

(b) Clean latch area on door.

(c) Place replacement latch in position and install four screws, washers and nuts.

(2) Check door seals for condition, and replace as required.

(3) Check that attachment bolts of three outboard hinge halves are loose.

(4) Position door, and install three hinge pins.

(5) Install three hinge pin retainers located beside each outboard hinge half.

(6) Tighten attachment bolts of three outboard hinge halves.

NOTE: Move door to closed position to verify that there is no binding, and that proper gap clearance exists on all sides (Ref. 51-80-00, Structural Repair Manual).

(7) Clean bonding jumper attachment surfaces (Ref. 20-24-04). Assure that bolts, nuts and washers are clean.

(8) Install two bonding jumpers on door (Ref. Fig. 401).

NOTE: Position bonding jumper lugs to face inboard.

(9) Apply sealant to bonding jumper attachment (Ref. 20-51-04).

(10) Check that APU platform contour mismatch is within
R specified limits (Ref. MM 49-00-01 or SRM 51-80-00).

(11) Close and latch door to check for proper latch adjustment.

NOTE: To assure that each latch lever (internal) is in firm contact with the mating surface of the APU platform structure, a reasonable force is required to move the locking lever (external) to the locked position. To obtain this condition, adjustment of the latching mechanism and/or the APU platform (within specified limits) may be required.

(12) On aircraft 001-022,
adjust door latching pressure by removing or installing a 0.032 inch thick shim between latch assembly and door skin, on inboard side only (Ref. Fig. 401); and/or vertical adjustment of APU platform (within specified limits).

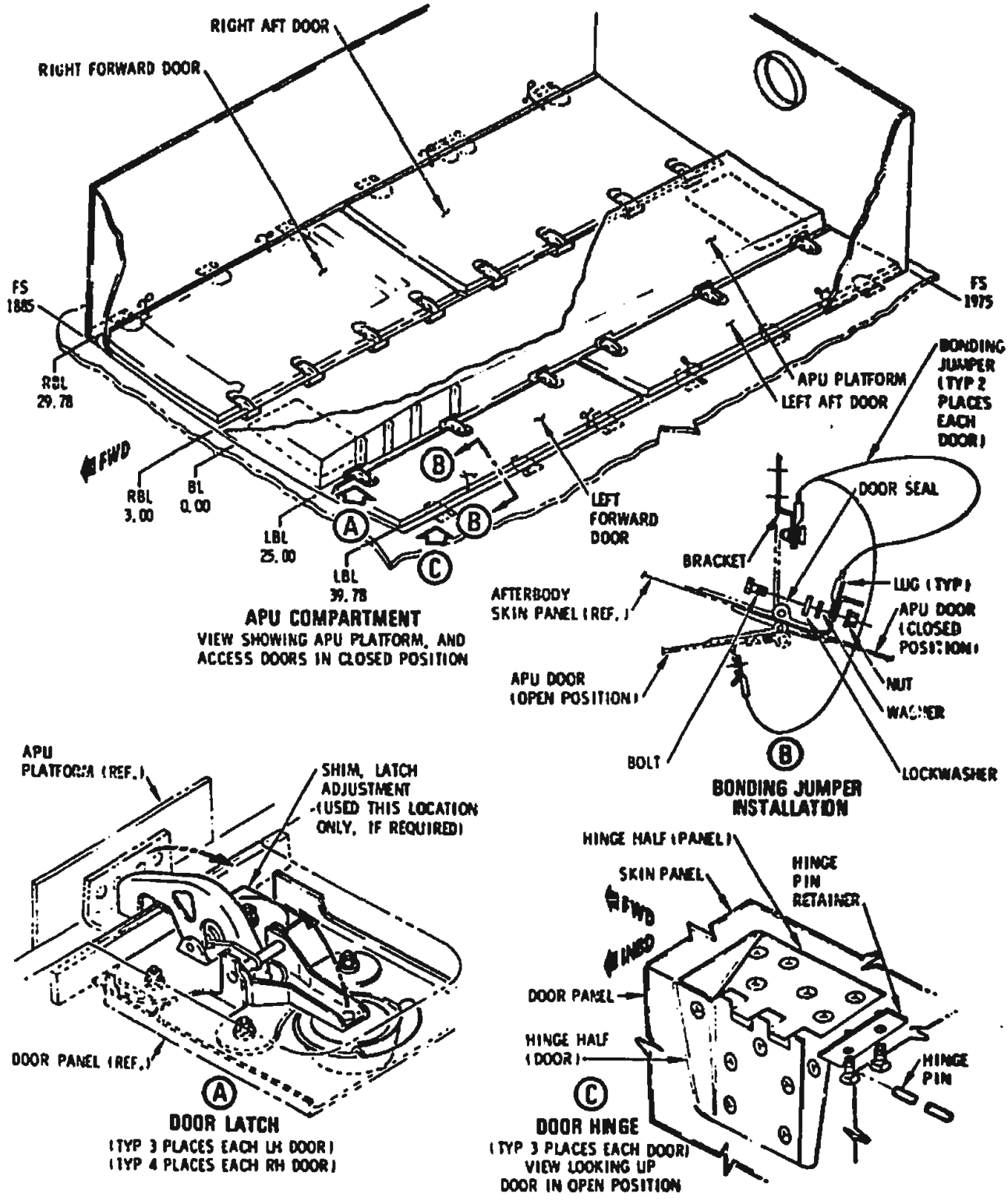
NOTE: If required, an additional corrosion resistant shim, not greater than 0.030 inch thick, may be installed under the existing shim.

(12) On aircraft 023-999,
adjust door latching pressure by turning adjustable striker bolt in or out as required.

NOTE: The latch lever incorporates a self-locking threaded insert. Therefore, no additional mechanical safetying is required for the adjustable striker bolt.

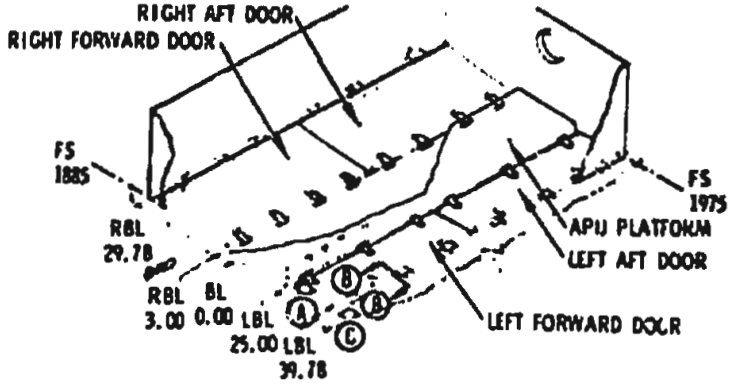
(13) Verify that door hold-open cable assemblies are properly stowed in retainer clips.

(14) Close and latch doors.



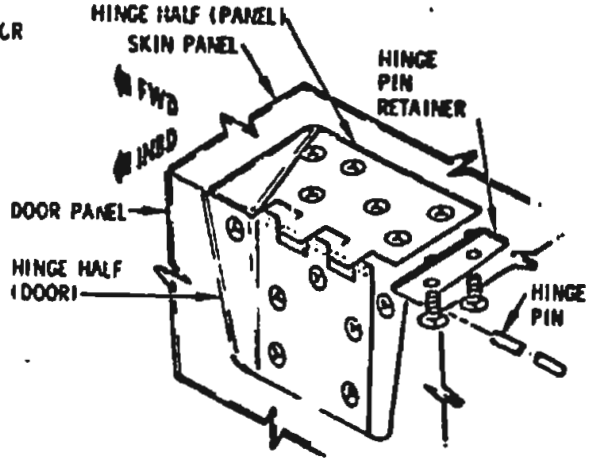
M1-15300-53-009

APU Access Doors - Removal and Installation
Figure 401



APU COMPARTMENT

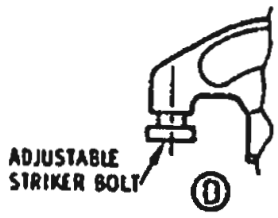
VIEWS SHOWING APU PLATFORM, AND ACCESS DOORS IN CLOSED POSITION



Ⓒ

DOOR HINGE

(TYP 3 PLACES EACH DOOR)
VIEW LOOKING UP
DOOR IN OPEN POSITION



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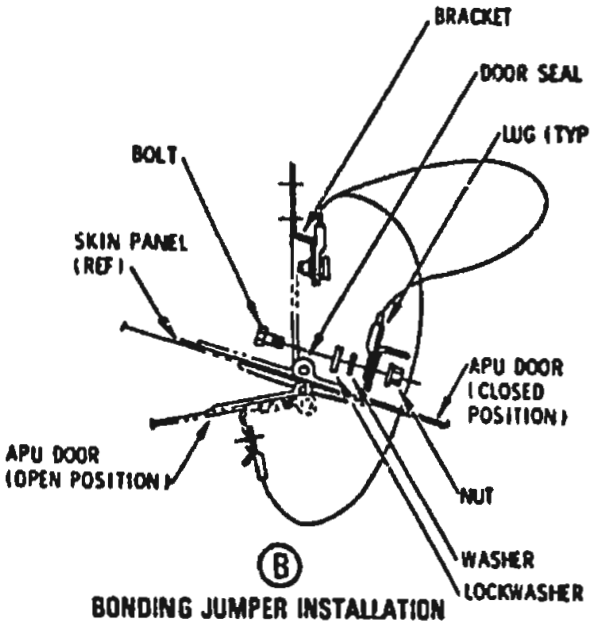
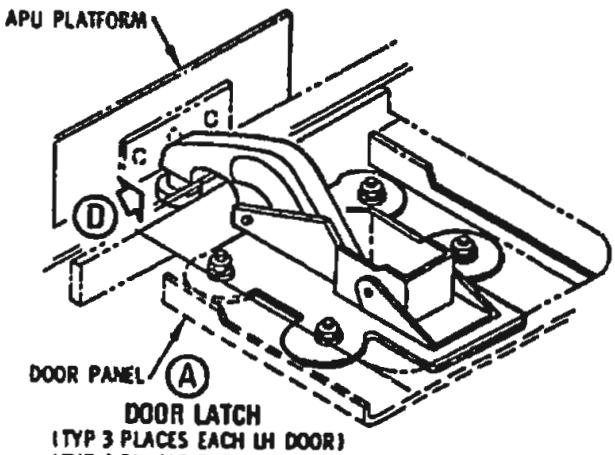


Ⓑ

BONDING JUMPER INSTALLATION



DOOR LATCH

(TYP 3 PLACES EACH LH DOOR)
(TYP 4 PLACES EACH RH DOOR)

MI-4500-53-050

APU Access Doors - Removal and Installation
Figure 401

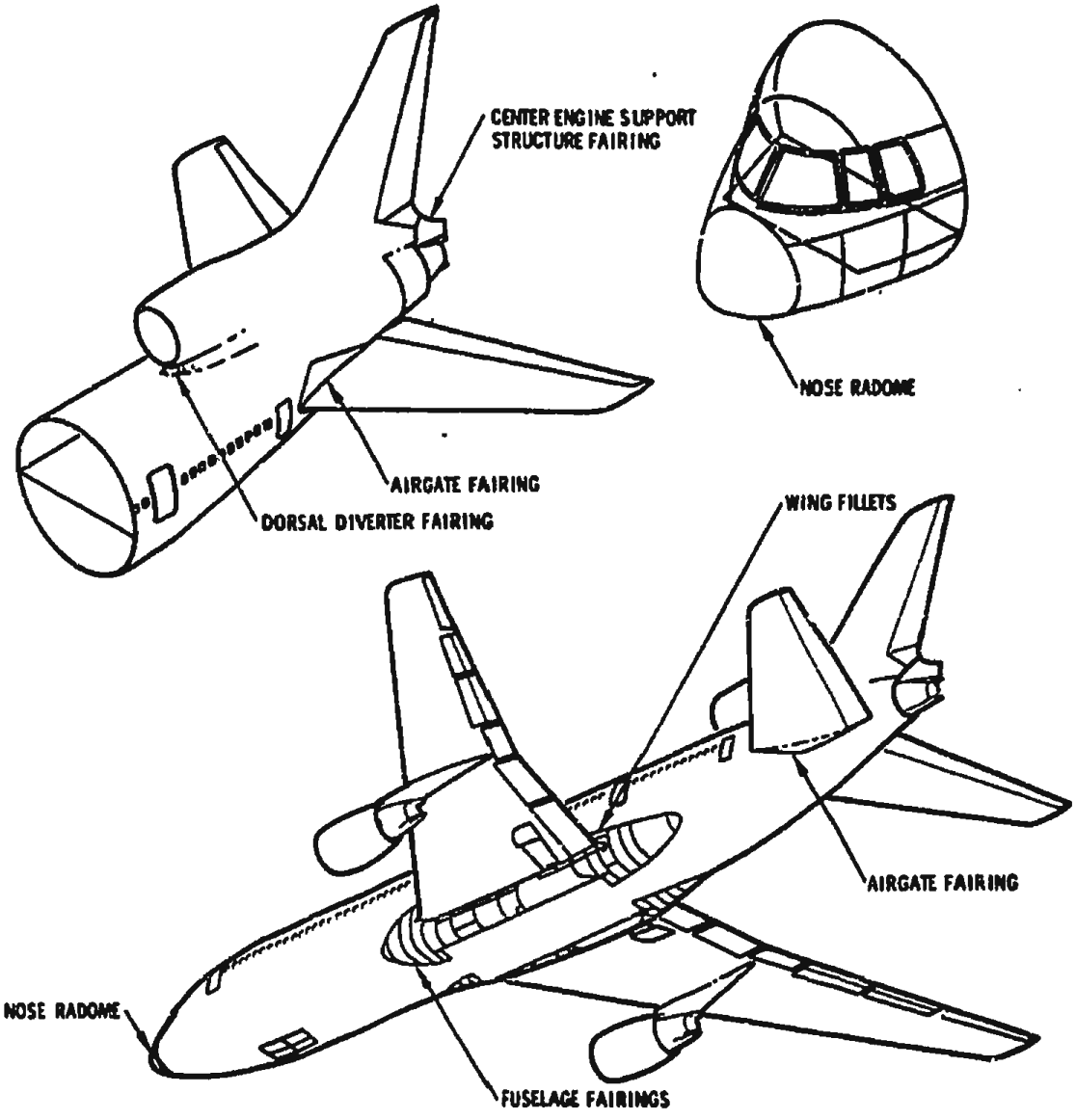
AERODYNAMIC FAIRINGS - DESCRIPTION AND OPERATION

1. General

The fairings and fillets on the fuselage (Ref. Fig. 1) consist of the nose radome, fuselage-to-wing fillets, main landing gear fairings, afterbody upper longeron fairings, and afterbody lower structure fairing assemblies. The fillets and fairings are removable panel assemblies.

CR 2. Conductive Coated Panels/Fairings

CR A. Panels which have conductive coatings should be repaired per
CR S.R.M. 51-50-10. An equivalent aluminum filled prepregnated
CR fiberglass (TWA Stk Nbr 52-0108/52-0127) may be used as an
CR alternate. Existing resistance values remain unchanged.



HH 4518
M1-A00-53-011

Fuselage Aerodynamic Fairings
Figure 1

EFFECTIVITY: ALL

050B

RADOME - DESCRIPTION AND OPERATION

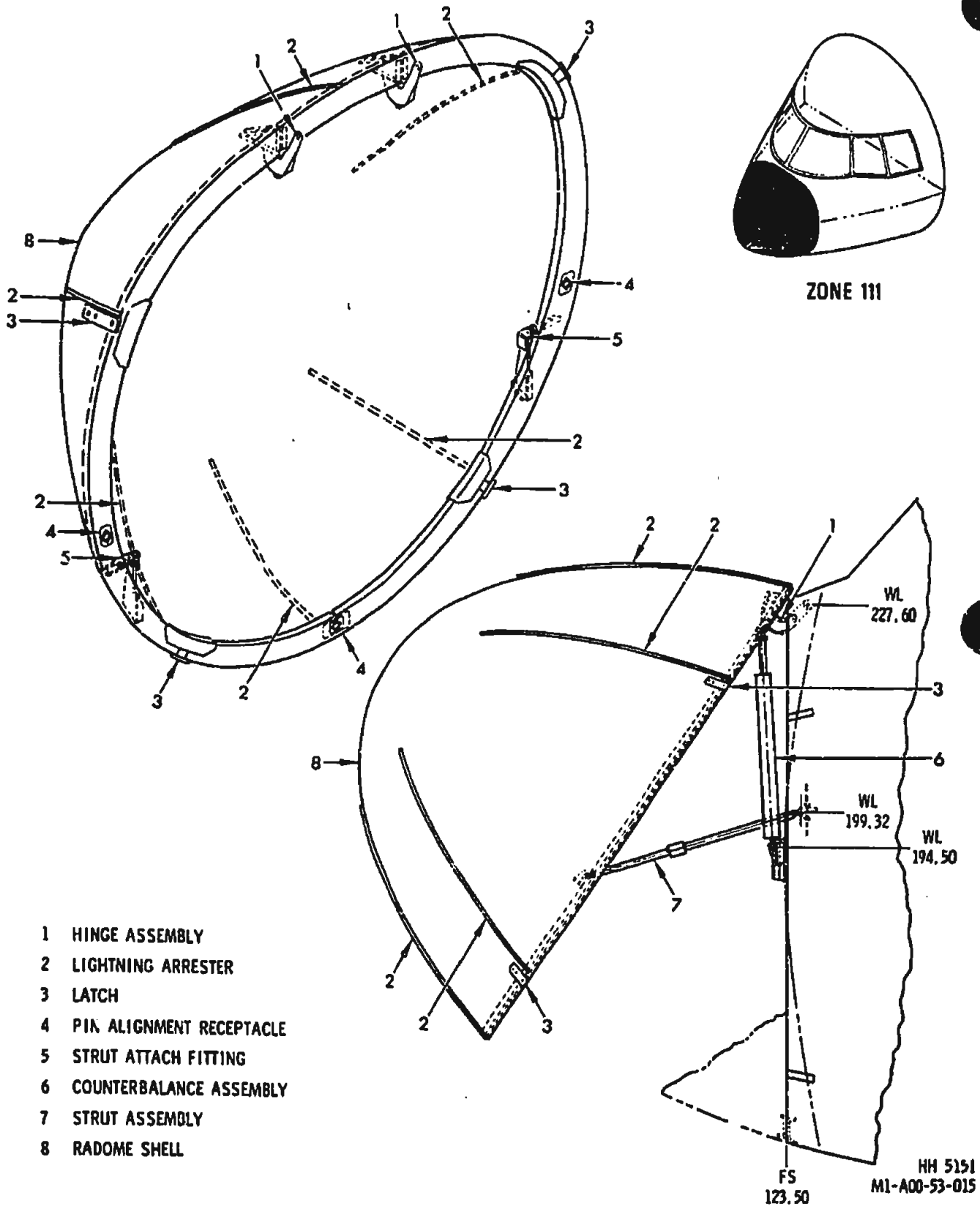
1. General

The nose radome (Ref. Fig. 1) is a streamlined housing that protects the antennas from structural damage and adverse weather conditions.

The radome installed forward of the forward pressure bulkhead, shields an avionics antenna and serves as aerodynamic fairing on the forward fuselage. The radome is hinged at the top and secured at the sides and bottom for easy access to equipment

The radome has high electromagnetic transmission characteristics and low resistance to wind. The radome is constructed of fiber glass laminated skins separated by flutes which form a hollow core. Six strips of 6061 T-0 aluminum metal are attached to the outer surface of the radome to protect it from lightning. The radome is secured at the sides and bottom by camloc-type latches. The latches are double-acting and are locked with tri-wing quarter-turn fasteners. Telescoping supports hold the radome open. A water drain hole is located at the bottom center of the radome. Aligning pins are located at the radome mount ring. The radome weighs approximately 85 pounds and is located at FS 123.25, zone 111.

The exterior surface of the radome is protected by weather-resistant paint.



Nose Radome
Figure 1

FUSELAGE NOSE RADOME - REMOVAL AND INSTALLATION

1. Equipment and Materials

Hoist equipment (overhead type)

Nose Radome Sling Assembly, Model B691, or equivalent

Multipurpose Maintenance Platform, Aircraft Equipment Co. Inc., Model No. 605, or equivalent

Flat bed dolly and padding, as required

Lock-wire, Fed Spec QQ-W-423, Condition A, 0.032-inch diameter, or equivalent

2. Referenced Procedures

34-44-01 Weather Radar System - Removal and Installation

53-51-51 Fuselage Nose Radome - Adjustment and Test

3. Removal/Installation

A. Removal

WARNING: DO NOT REMOVE RADOME WHILE WEATHER RADAR IS IN OPERATION.

(1) Open and tag weather radar system circuit breakers (Ref. 34-44-01).

CAUTION: PROVIDE ADEQUATE CLEARANCE BETWEEN MAINTENANCE PLATFORM AND AIRCRAFT TO PREVENT STRUCTURAL DAMAGE.

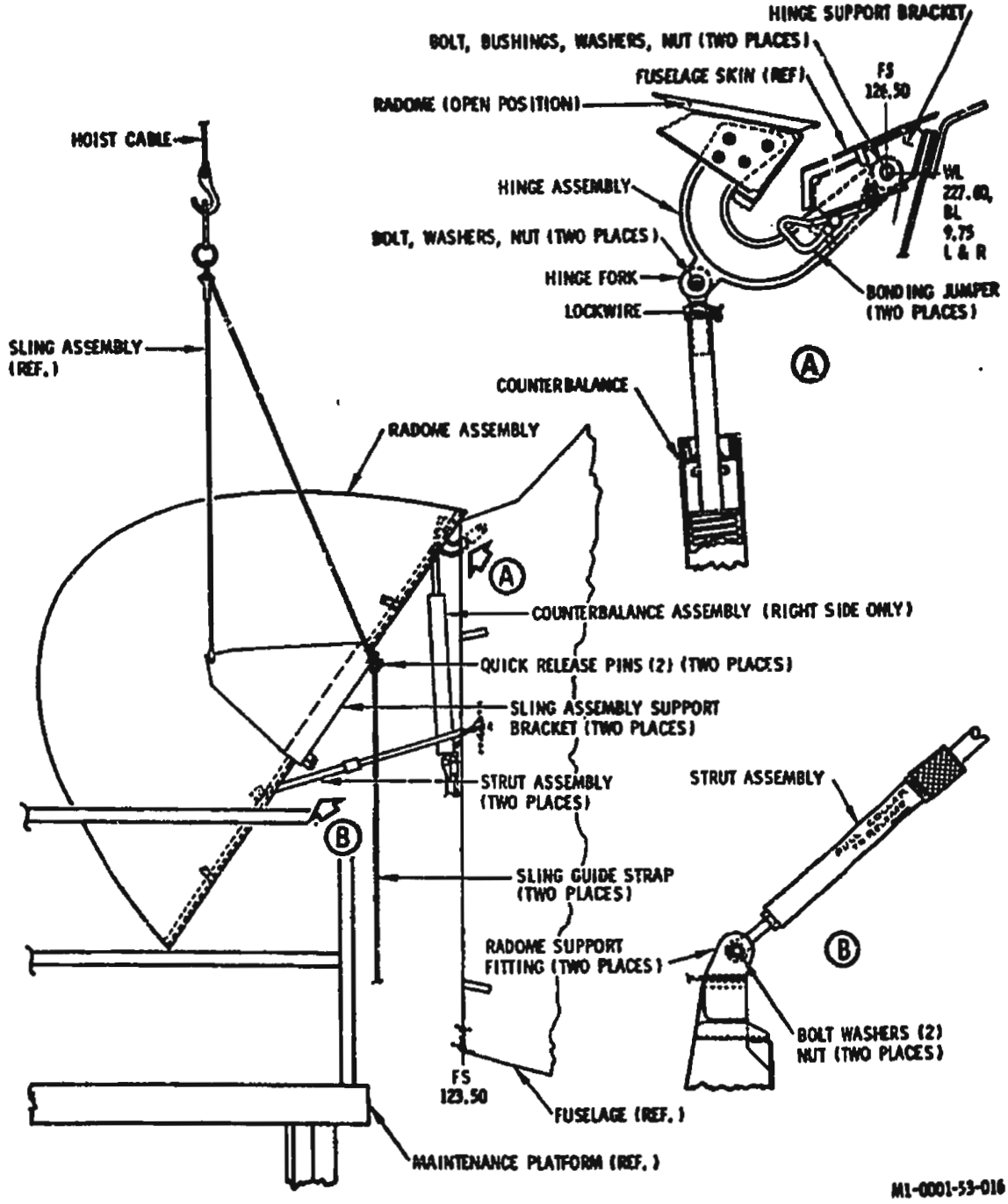
(2) Position maintenance platform for access to nose radome, and lock wheels.

(3) Open radome approximately 35 degrees (Ref. Fig. 401).

(4) Attach sling assembly to hoist hook.

(5) Attach sling assembly support brackets to radome with quick-release pins.

(6) Operate hoist to take up slack in sling cables and adjust guide straps to remove slack.



R R Fuselage Nose Radome - Removal and Installation
Figure 401

(7) Disconnect strut assemblies at radome attachment supports by removing nuts, washers, and bolts.

(8) Raise radome until the counterbalance assembly is fully extended (approximately 29.75 inches).

CAUTION: WHEN DISCONNECTING RADOME COUNTERBALANCE ASSEMBLY, DO NOT PERMIT COUNTERBALANCE ASSEMBLY TO FALL AND STRIKE ANTENNAS.

(9) Disconnect counterbalance assembly at the radome hinge assembly by removing nut, washers, and bolt. Secure counterbalance assembly in vertical position.

R (10) Disconnect bonding jumper at each radome hinge assembly.

(11) With a man on each side of radome holding guide strap to stabilize radome assembly, remove nuts, washers, bolts, and bushings which attach radome assembly to bulkhead hinge support brackets (FS 126.5, WL 227.6).

CAUTION: WHEN REMOVING RADOME FROM AIRCRAFT, AVOID STRIKING THE LOCALIZER, WEATHER RADAR, AND GLIDESLOPE ANTENNAS.

(12) Raise radome to clear fuselage.

(13) When radome is clear of aircraft, rotate radome approximately 55 degrees (radome base down and horizontal) by manually lengthening guide straps between sling beam assembly and sling support bracket angle.

(14) Lower radome to padded bed of dolly.

(15) Remove sling assembly from radome assembly by removing quick-release pins.

B. Installation

WARNING: DO NOT INSTALL RADOME WHILE WEATHER RADAR IS IN OPERATION.

(1) Verify that circuit breakers opened in Step 3A(1) are open and tagged (Ref. 34-44-01).

CAUTION: PROVIDE ADEQUATE CLEARANCE BETWEEN MAINTENANCE PLATFORM AND AIRCRAFT TO PREVENT STRUCTURAL DAMAGE.

(2) With dolly and radome assembly in position for installation, position maintenance platform for access to nose radome area, and lock wheels (Ref. Fig. 401).

(3) Attach sling assembly to hoist hook.

(4) Attach nose radome sling support brackets to radome with quick-release pins.

(5) Use hoist to take up slack in sling cables and adjust guide straps as required.

(6) Raise radome and rotate approximately 55 degrees to the normal radome open position.

CAUTION: WHEN INSTALLING RADOME AVOID STRIKING THE LOCALIZER, WEATHER RADAR, AND GLIDESLOPE ANTENNAS.

(7) Lower radome to align radome hinge assemblies with bulkhead hinge support brackets. (FS 126.5, WL 227.6).

(8) Install bushings, bolts, washers, and nuts at the hinges.

R (9) Connect bonding jumper at each radome hinge assembly.

(10) Check that counterbalance assembly has a free length of 29.75 inches. If not, readjust end fitting to this length. Lock-wire locknuts after adjustment.

(11) Align upper end of counterbalance assembly with the radome hinge assembly. Install bolt, washers, and nut.

(12) Align strut end fittings with radome attachment supports. Install bolts, washers, and nuts.

(13) Close radome, engage and lock all latches.

(14) Remove sling assembly from radome assembly and from hoist hook. Stow hoist assembly as required.

NOTE: Latch locking force (preload) should be approximately 20 to 35 pounds, and should be determined with all latches locked. If the force required to lock a latch is not within the 20- to 35-pound range, latch adjustment is required (Ref. 53-51-51).

(15) Remove tags and close circuit breakers opened in Step 3A(1) (Ref. 34-44-01).

(16) Move maintenance stand and sling assembly to stowage area.

FUSELAGE NOSE RADOME - ADJUSTMENT AND TEST

1. Equipment and Materials

Multipurpose Maintenance Platform, Aircraft Equipment Co. Inc., Model No. 605, or equivalent

2. Referenced Procedure

34-44-01 Weather Radar System - Removal and Installation

3. Adjustment/Test

A. Latch Adjustment

WARNING: DO NOT WORK ON RADOME WHILE WEATHER RADAR IS IN OPERATION.

(1) Open and tag weather radar system circuit breakers (Ref. 34-44-01).

(2) Open latch handle (Ref. Fig. 501).

(3) Disengage retraction springs from adjustment bolt.

(4) Unscrew adjustment bolt one full turn counterclockwise at a time until latch handle will not close. Load must not exceed 35 pounds.

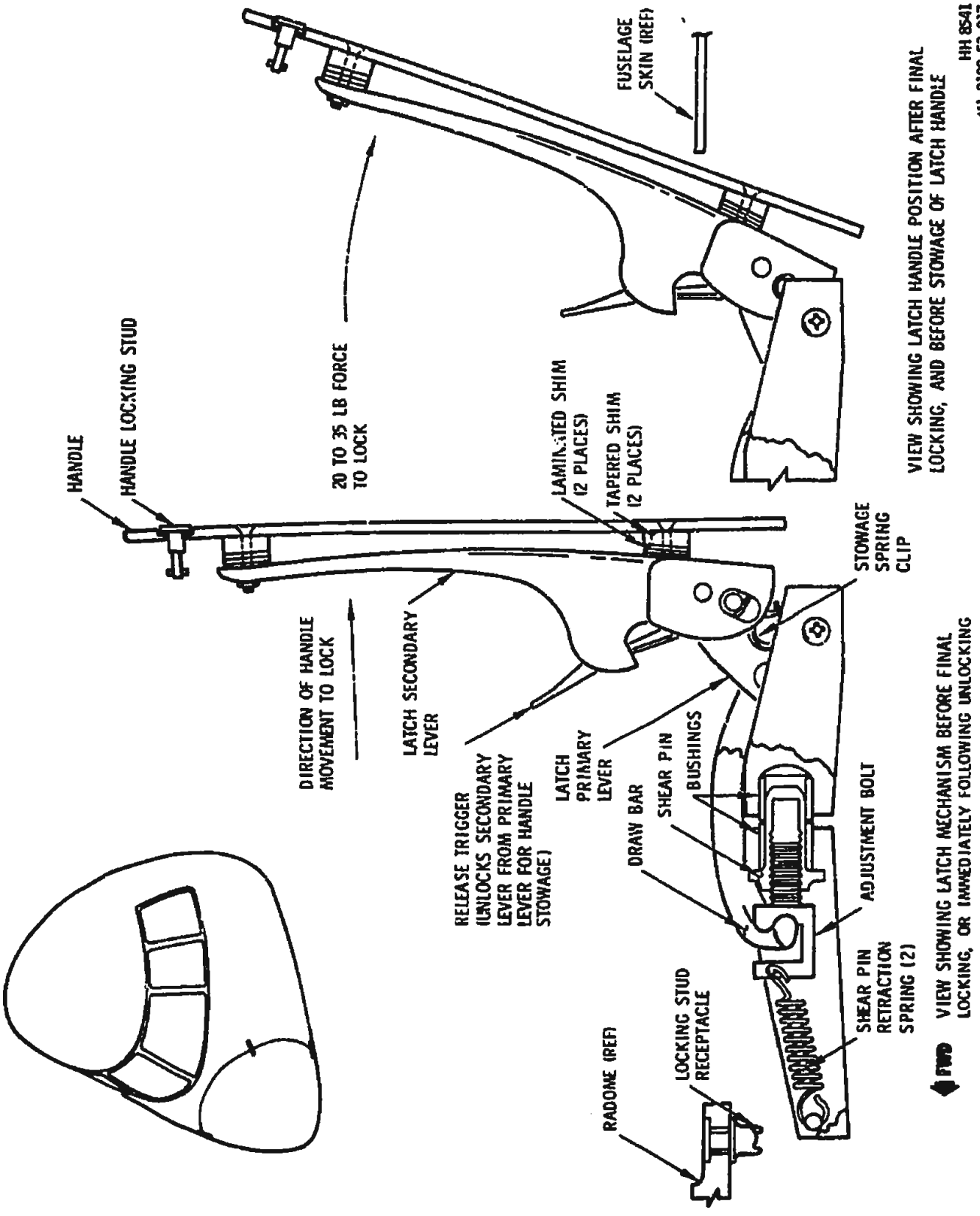
R NOTE: This adjustment can be accomplished without a
R scale. The load required to close the latch
R should be reasonable (20 to 35 pounds). A load
R in excess of 50 pounds can damage the latch.
R When the adjustment bolt is properly set, one
R additional turn clockwise, or counterclockwise
R will make the latch too loose, or too tight.

(5) Screw in adjustment bolt one full turn clockwise.

(6) Engage retraction springs on the latch adjustment bolt.

(7) Close latch and lock handle.

(8) Remove tags and close circuit breakers opened in Step 3A(1) (Ref. 34-44-01).


FUSELAGE SKIN (REF)
20 TO 35 LB FORCE TO LOCK
HANDLE
HANDLE LOCKING STUD
LAMINATED SHIM (2 PLACES)
TAPERED SHIM (2 PLACES)
VIEW SHOWING LATCH HANDLE POSITION AFTER FINAL LOCKING, AND BEFORE STOWAGE OF LATCH HANDLE
HH 8541
MI-0100-53-017
STOWAGE SPRING CLIP
DIRECTION OF HANDLE MOVEMENT TO LOCK
LATCH SECONDARY LEVER
RELEASE TRIGGER (UNLOCKS SECONDARY LEVER FROM PRIMARY LEVER FOR HANDLE STOWAGE)
LATCH PRIMARY LEVER
BUSHINGS
SHEAR PIN
DRAW BAR
ADJUSTMENT BOLT
SHEAR PIN RETRACTION SPRING (2)
LOCKING STUD RECEPTACLE
RADOME (REF)
FWD
VIEW SHOWING LATCH MECHANISM BEFORE FINAL LOCKING, OR IMMEDIATELY FOLLOWING UNLOCKING

Nose Radome Latch Adjustment
Figure 501

WING TO FUSELAGE FAIRINGS - DESCRIPTION AND OPERATION

1. General

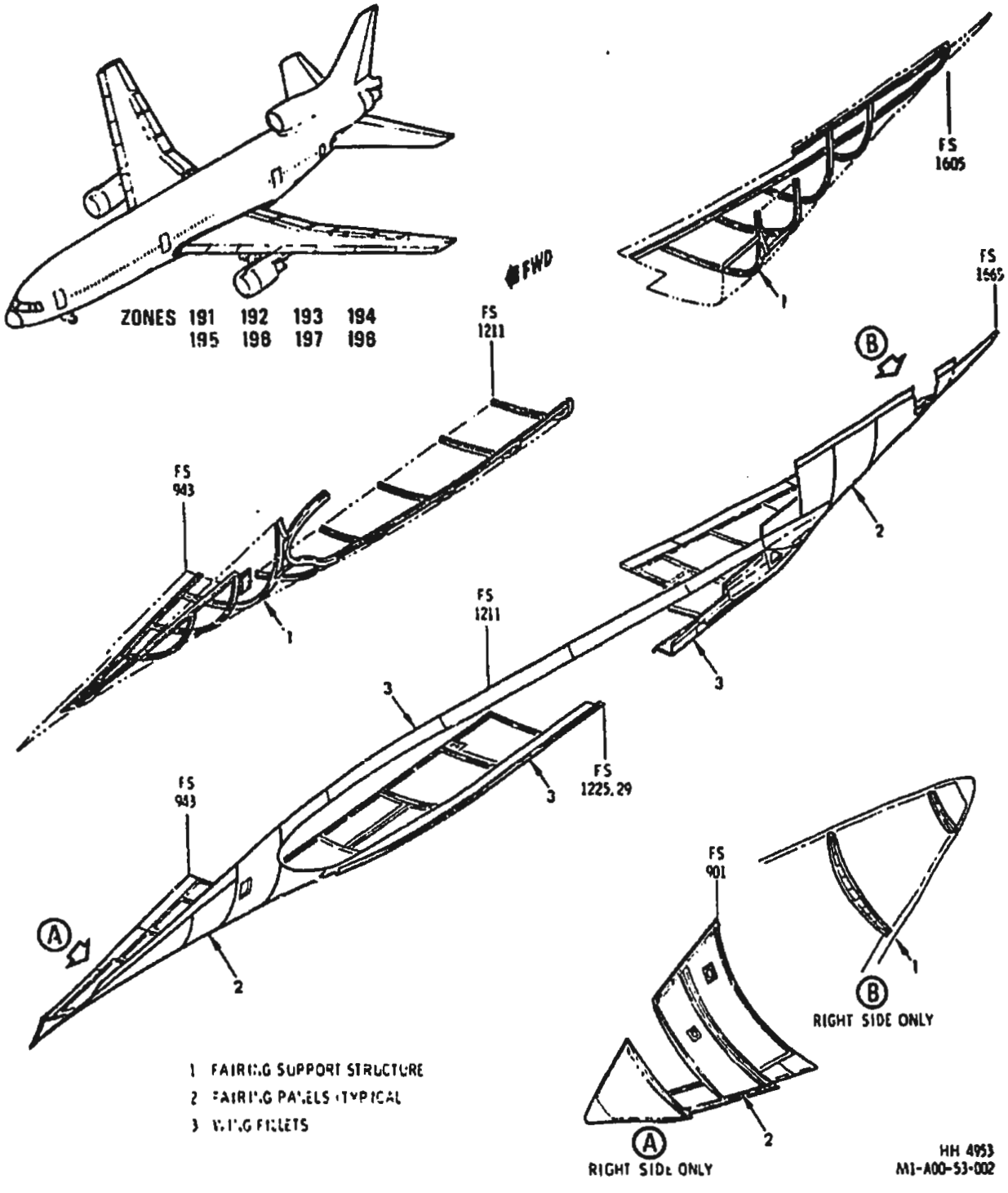
Wing-to-fuselage fillets and main landing gear fairings (Ref. Fig. 1) are located on both sides of the aircraft to provide aerodynamic smoothness.

The fillets and fairings are attached to the fuselage and fairing support structure with tri-wing screws. The support structure consists of double-T framing of 7075-T76 aluminum extrusion. The Tees are attached along their central legs to form an I-support. The I-members vary in depth depending on fairing contour.

Rub strips are attached to the outer edges of the fillets to allow the wing to flex without causing damage to the wings, fuselage, or fillets. The rub strips are made of silicone rubber with Dacron covers. Individual sections of fillet or fairing may be removed for access to the fuselage and wing area.

The fillets and fairings are constructed of fiber glass laminate of 0.020-inch face exterior sheets, 0.015-inch interior sheet, and fiberous nylon honeycomb core varying from 1/4-inch to 1-inch in thickness depending on the size of the panel. Some over wing fillets are solid fiber glass laminates.

R The fillets and fairings have a coating of flame-sprayed
R aluminum to provide for panel grounding, and as a ground plane
R for the ADF ANTENNAS.



R Main Landing Gear Fillets and Fairings
R Figure 1

EFFECTIVITY: ALL

001B

R # WING TO FUSELAGE FAIRINGS - MAINTENANCE PRACTICES

R 1. General

R The following procedure allows engines to be operated and the
R aircraft flown on revenue flights with the indicated wing to
R fuselage fillets missing.

R Fillet sections may be missing from either or both sides of the
R aircraft. The forward fillet section extends from FS 983 to FS
R 1096 (left and right) and the aft section extends from FS 1096
R to FS 1212 (left and right) (Ref. Fig. 201).

R All flights undertaken in this configuration must be done in
R accordance with the limitations specified in the Airplane Flight
R Manual Configuration Deviation List.

R 2. Equipment and Materials

R Tape - Weatherproof Fabric-Backed Adhesive (width as required)
R 3M Co., Y-435, or equivalent

R Solvent - O-T-620-1, 1,1,1 - Trichloroethane, or equivalent

R 3. Maintenance Practices

R A. Configuration Deviation

R (1) Remove both fillets between FS 683 and FS 1212 on the
R same side of the aircraft. Retain all bolts and
R washers for reuse.

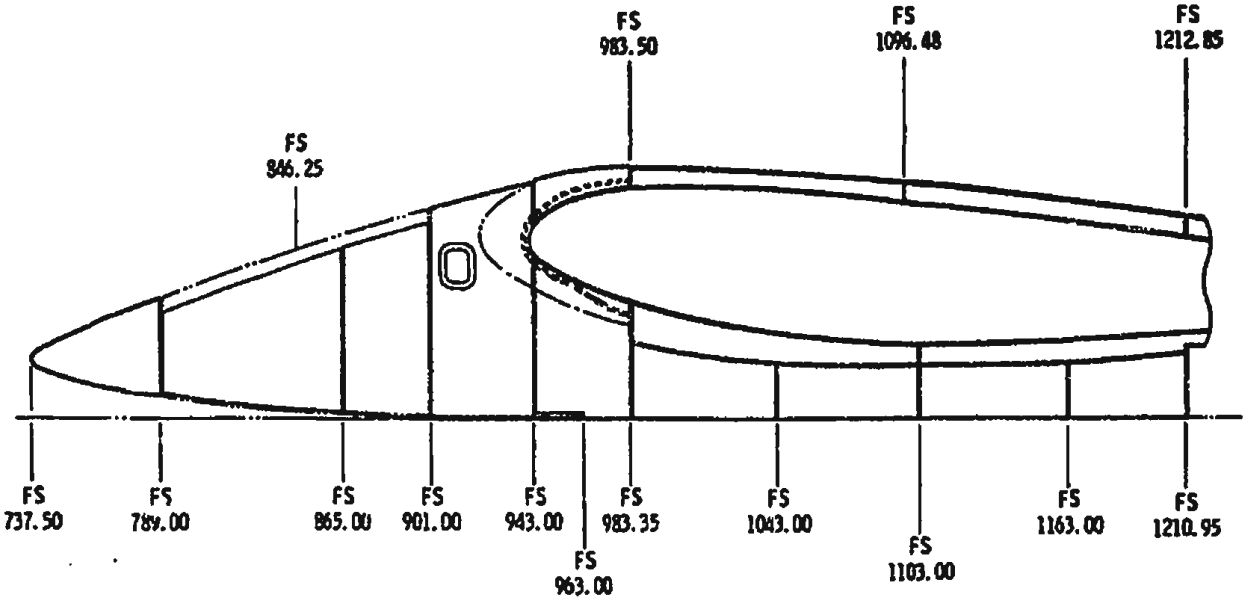
R (2) If a fillet was missing prior to Step 3A(1); inspect
R all bolt locations. Remove all remaining bolts and
R washers and retain for reuse.

R (3) With both fillets removed, check fillet support
R brackets for evidence of damage.

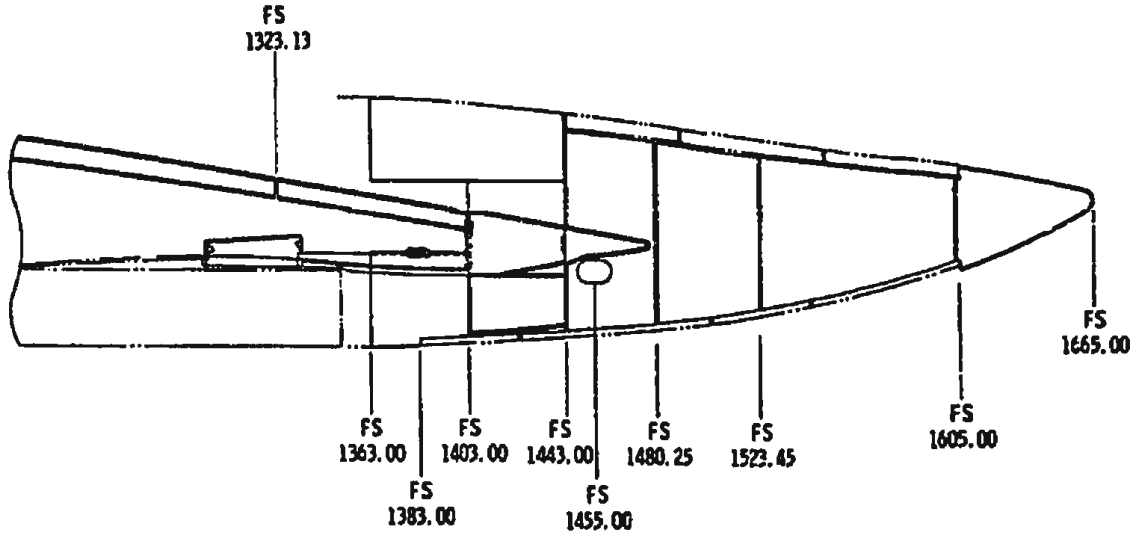
R (4) At fillet support fittings at FS 983 and FS 1212, clean
R support fittings and surrounding structure. Use clean
R cloth and solvent.

R (5) Apply weatherproof fabric-backed tape over all openings
R in support brackets at FS 983 and FS 1212. Tape must
R overlap openings by one-half inch.

R (6) Make appropriate entry in aircraft log book.



LEFT SIDE (TYPICAL)



LEFT SIDE (TYPICAL)

M1-0000-53-099

R Wing to Fuselage Fairings
R Figure 201

R EFFECTIVITY: ALL
R
002B

WING TO FUSELAGE FAIRINGS - REMOVAL AND INSTALLATION

1. General

This procedure is for removal and installation of wing-to-fuselage fillets and main landing gear fairings located on both sides and bottom of the fuselage.

2. Equipment and Materials

Maintenance platform - Model 605, Aircraft Equipment Co., or equivalent

Sealing Compound - C-40-1279, Aero Seal Compound, or equivalent

Sealing Compound - LCM-40-2180 TYPE I, or equivalent

3. Referenced Procedures

R	20-51-04	Environmental Sealing of Model L-1011 Airplane -
R		Maintenance Practices
R	53-52-02	Wing to Fuselage Fairings - Maintenance Practices

4. Removal/Installation

A. Removal

(1) Position and adjust maintenance platform as required.

CAUTION: DO NOT OPERATE ENGINES WHEN ONE OR MORE FILLET PANELS OR WING FAIRINGS ARE MISSING ON THE SAME
R WING BETWEEN FS 983 AND FS 1212 UNLESS THE
R CONFIGURATION DEVIATION CONTAINED IN 53-52-02
R MAINTENANCE PRACTICES HAS BEEN COMPLIED WITH. DAMAGE COULD RESULT TO THE FUSELAGE SKIN, HORIZONTAL STABILIZER OR NUMBER TWO ENGINE BY PANELS SEPARATING FROM THE AIRCRAFT WHILE ENGINE IS IN OPERATION.

(2) Release fasteners and remove fillet panels and wing fairings (Ref. Fig. 401).

(3) Tag and identify removed panels and fillets to assure correct location for installation.

B. Installation

CAUTION: ALL WING FAIRINGS AND FILLET PANELS BETWEEN FS 983 AND FS 1212 MUST BE AVAILABLE PRIOR TO INSTALLATION.

(1) Apply a faying surface seal between wing fairings and fuselage/wing skin and between fillet panels and fuselage/wing skin using sealing compound, LCM-40-2180 Type I, or (Ref. 20-51-04 and Fig. 402).

(2) Install fillet panels and wing fairings (Ref. Fig. 401) as follows:

(a) Verify that area around each fastener hole is free of paint so that screw fastener and dimpled washers contact aluminum flame sprayed surface.

NOTE: If necessary, paint should be carefully removed and the aluminum flame sprayed surface around each fastener hole cleaned with 3M SCOTCH BRITE (Ref. 20-24-04).

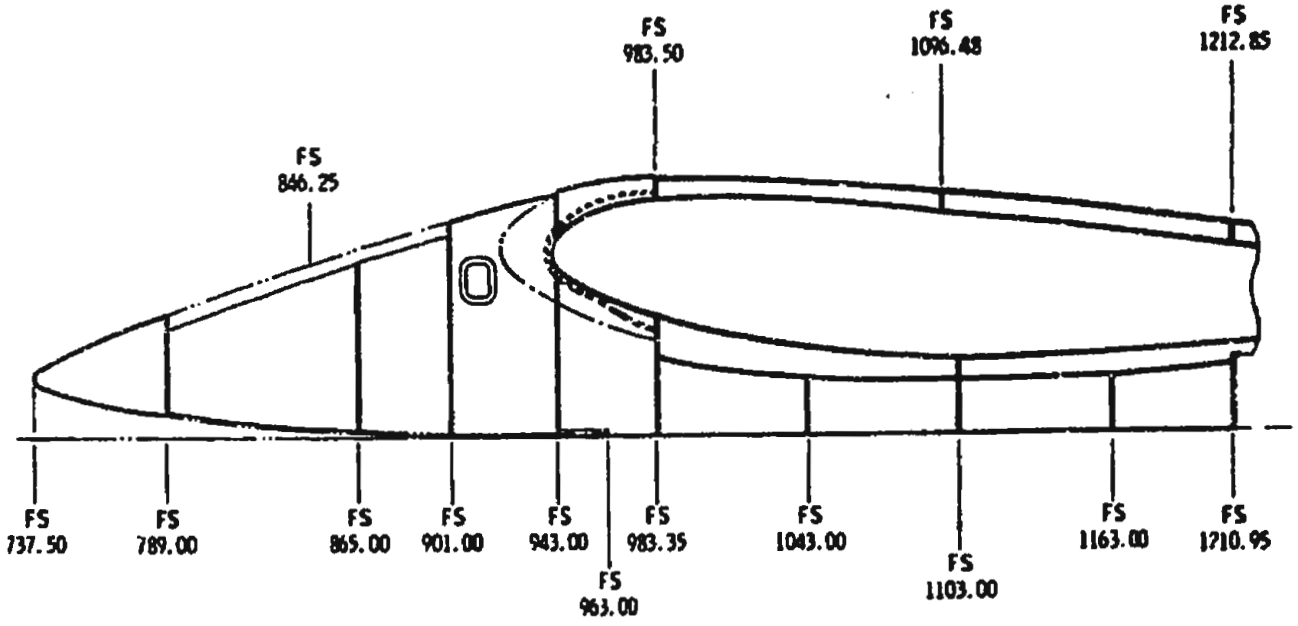
(3) Tighten fasteners, ensuring upper fillet panel fasteners do not bottom out against fuselage when installed.

(a) Resistance measurements should be made after repair or change to aircraft bonding or grounding connections, after mechanical connections are made, and prior to application of finishes or sealants (Ref. 20-24-04, Table 202).

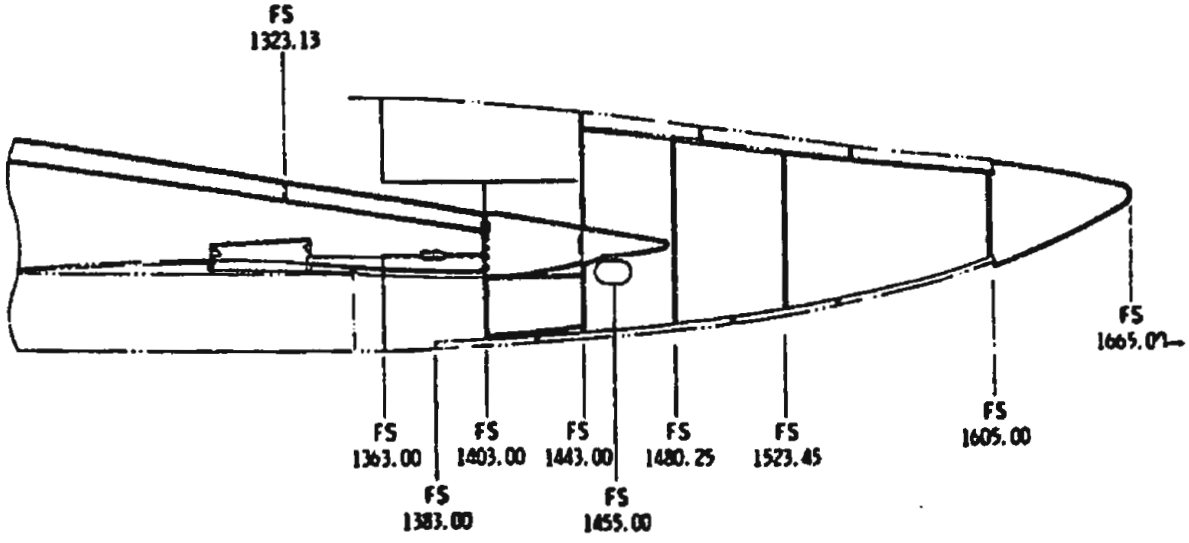
NOTE: Ensure rub strip seals and support brackets do not lap and interfere with proper seating of panels against supports.

(4) Apply a bead of sealing compound, C-40-1279, or equivalent, along intersection of panels and fuselage/wing skin.

R (5) Blend sealant flush with adjacent surfaces to form environmental seal.



LEFT SIDE (TYPICAL)

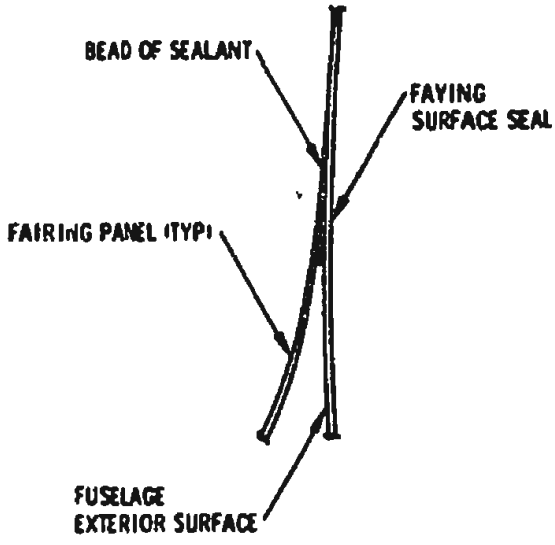


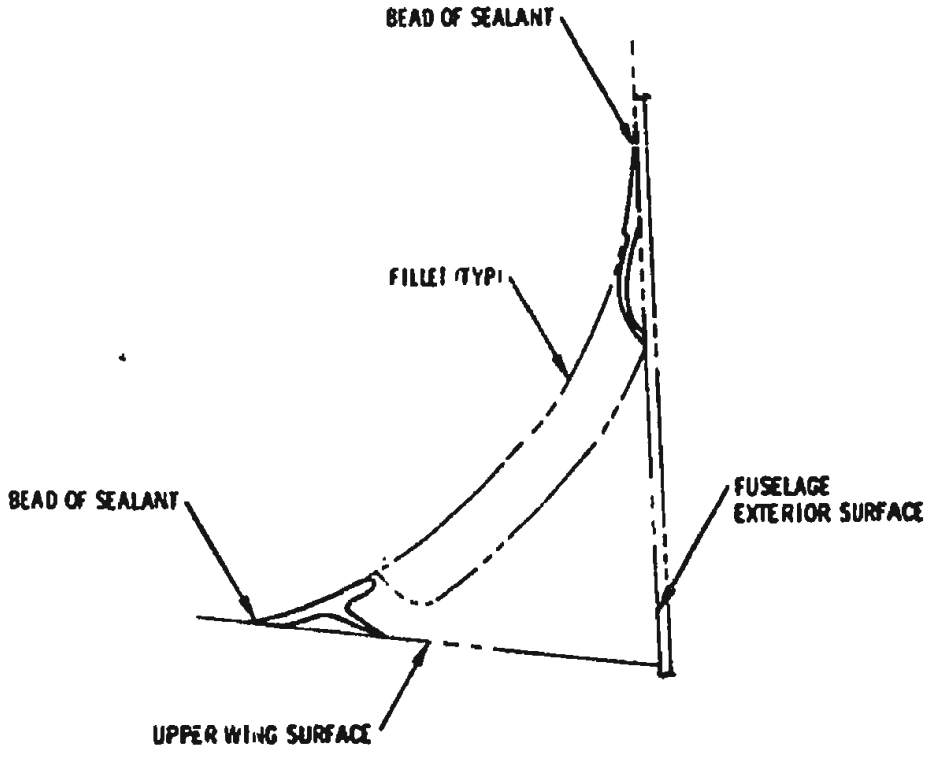
LEFT SIDE (TYPICAL)

A11-0000-53-099

R Wing to Fuselage Fairings
R Removal and Installation
R Figure 401

R EFFECTIVITY: ALL
R
001B





MI-0000-53-101

R RR Wing to Fuselage Fairings
Removal and Installation
Figure 402

R RR EFFECTIVITY: ALL

001B

FUSELAGE AFTERBODY FAIRINGS - DESCRIPTION AND OPERATION

1. General

The afterbody upper longeron fairing covers external structural attaching hardware between FS 1725 and 1792 at the upper longeron.

The fairing is a fiber glass laminate with a fibrous nylon honeycomb core. The fairings are removable.

The afterbody lower structure fairing serves to aerodynamically fair the lower afterbody structure into the aft fuselage section.

The removable panels, zone 316, are constructed of fiber glass skins with a fibrous nylon honeycomb core.

C FUSELAGE AFTERBODY FAIRINGS - REPAIR PROCEDURES

C 1. Airworthiness repairs for damage to wing-to-fuselage fairing,
CR reference IPC 53-52-01, 53-52-02, and 53-52-03.

C A. Aluminum foil tape mfg. P/N Y9162B (11 inches wide) TWA Stk.
C Nbr. 52-0326 may be used for airworthiness repairs on holes
C no larger than four inches square and cracks no longer than
C six inches as follows, see Figure 801, View A.

C (1) Stop drill all cracks using a 1/4 inch drill. Roughen
C area a minimum of two inches all sides beyond the
C damage area and clean with acetone or MEK.

C NOTE: Use caution when drilling holes to prevent
C damage to the fuselage skin.

C (2) Cut an aluminum foil patch to extend a minimum of two
C inches beyond damage on all sides and install tape.
C Roll tape after installation to assure a good bond.

C B. Airworthiness repairs to damages larger than four inches
C square and cracks longer than six inches must be repaired
C with an .025 or .032 20-24-T3 or equivalent aluminum sheet
C as follows. See Figure 801, View B.

C (1) Stop drill all cracks using a 1/4 inch drill.

C (2) Cut an aluminum patch to extend one inch beyond the
C damage area.

C (3) Drill No. 11 holes for nylon blind fasteners around the
C edge of patch with two or three inch spacing and one
C half inch edge distance.

C NOTE: When repairing large areas, pick up existing
C holes and fasteners used in fairing installation
C and add No. 11 holes as necessary for patch tie
C down on all sides.

C (4) Drill No. 11 holes into the fairing using the patch as
C a template.

C NOTE: Use caution when drilling holes to prevent
C damage to the fuselage skin.

C (5) Install double faced rug tape, mfg. P/N P50, TWA Stk.
C Nbr. 47-1416 on the edge of the patch for patch
C adhesion to the fairing and trim to match patch.

CR (6) Install patch using nylon blind fasteners, mfg. P/N CR 201-120741-00-0101, TWA Stk. Nbr. 43-6290.

CR (7) Cut aluminum foil, mfg. P/N Y9162B (11 inches wide) TWA CR Stk. Nbr. 52-0326 into strips to cover installed CR fasteners and a minimum of two inches beyond the patch CR on all sides.

CR NOTE: Where the original fairing installation CR fasteners are used for patch installation, cover CR only the added nylon blind fasteners and CR adjacent edge.

CR (8) Roll tape after installation to assure a good bond.

CR 2. The following material and hardware is required for repairs of CR wing-to-fuselage fairing.

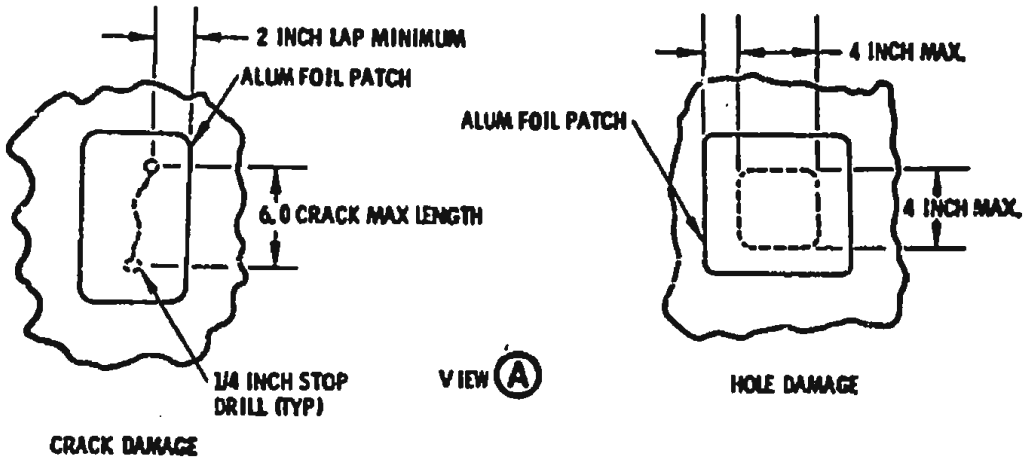
CR A. .025 or .032 aluminum sheet 2024T3 or equivalent.

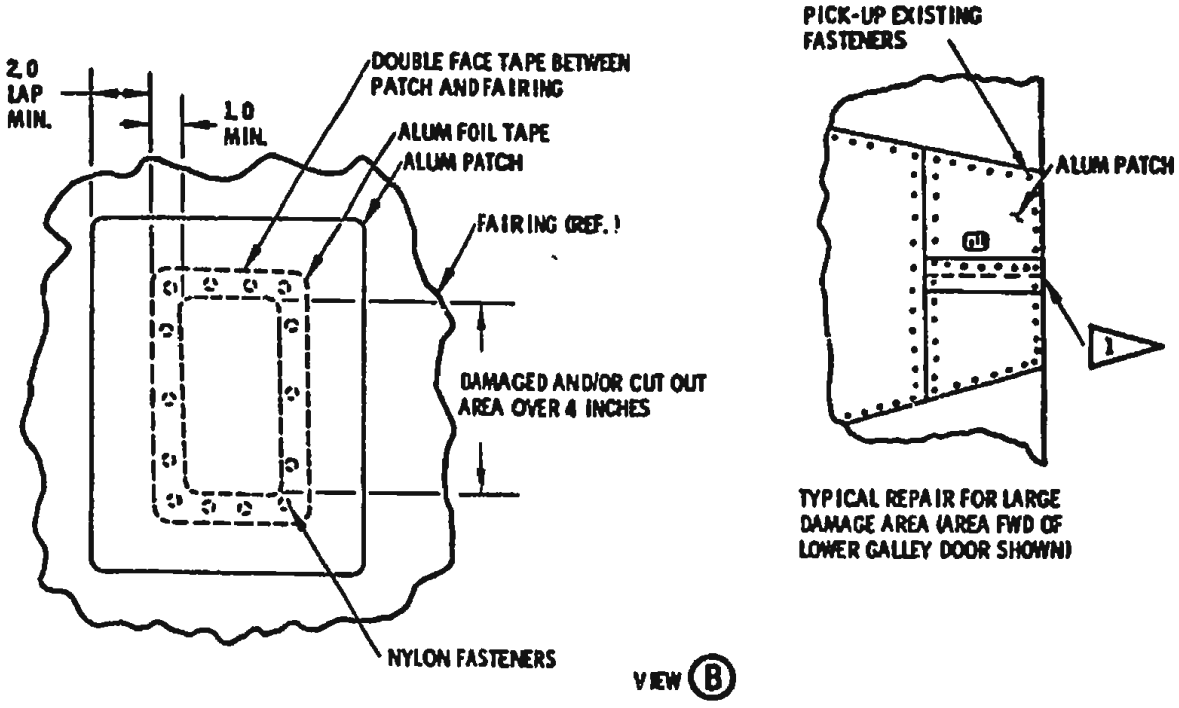
CR B. Double face tape (rug tape) mfg. P/N P50, TWA Stk. Nbr. CR 47-1416.

CR C. Nylon blind fasteners, mfg. P/N 201-120741-00-0101, TWA Stk. CR Nbr. 43-6290.

CR D. Aluminum foil tape, mfg. P/N Y9162B (11 inches wide) TWA CR Stk. Nbr. 52-0326.

CR 3. Whenever an airworthiness repair is made, MCIMD must be advised CR by longline to set up permanent correction.





1 ALUM FOIL TAPE MAY BE CUT INTO 3 OR 4 INCH WIDE STRIPS. INSTALL DOUBLE FACE TAPE, FASTENERS AND ALUM FOIL TAPE AS SHOWN FOR "REPAIRS FOR SMALL DAMAGE".

M1-5000-53-085

CR
CR

Airworthiness Repairs
Figure 801

R
R
001B

EFFECTIVITY: ALL